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CHEMICAL TERMINATION OF LATE-SEASON COTTON FRUITING IN ARIZONA AND CALIFORNIA, 1972-76

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ABSTRACT

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Chemical termination of cotton (*Gossypium* spp.) is prevention or removal of late-season cotton fruiting with plant growth regulators to reduce overwintering populations of pink bollworm (*Pectinophora gossypiella* (Saunders)) and other cotton insects. Tests were made to evaluate the effect of plant growth regulators applied to cotton on lint yield, immature bolls at harvest, seed quality, and fiber quality. Mixtures of fast-acting, nonpersistent plant growth regulators with slow-acting, persistent plant growth regulators were found to be superior to either type used alone. Two slow-acting, effective plant growth regulators are chlormequat, (2, chloroethyl) trimethyl ammonium chloride, and chlorflurenol, methyl 2-chloro-9-hydroxyfluorene-9-carboxylate, each generally used at 0.5 pounds active ingredient per acre in mixture. Fast-acting plant growth regulators are 2,4-D, (2,4-dichlorophenoxy) acetic acid, usually used at 0.025 lb ai/acre in mixtures, and Pennwalt TD-1123, 3,4-dichloroisothiazole 5-carboxylic acid, used at 1.0 lb ai/acre. Treatments including 2,4-D in a mixture effectively reduced immature bolls at harvest with minor effect on yield, but reduced and slowed emergence of seed from treated cotton and "froze" leaves, squares, and flowers to plants. TD-1123 plus a slow-acting plant growth regulator was effective for chemical termination of Upland cotton (*G. hirsutum* L.), but not Pima cotton (*G. barbadense* L.). TD-1123 consistently enhanced subsequent defoliation of both cotton species. Other promising plant growth regulators need further evaluation.

Chemical termination reduced immature bolls an average of 96.5 percent for the best treatments on southeastern-type Upland cotton and reduced lint yields an average of 7 percent. Treatments were less effective on Acala and Pima cotton. On large farm plots, chemical termination consistently increased yield. In 10 tests involving 27 treatments, chemical termination reduced late fall pink bollworms 79 percent and immature bolls 83 percent. Chemical termination was superior to defoliation or desiccation for pink bollworm control.

KEYWORDS: *Gossypium hirsutum* L., *Gossypium barbadense* L., pink bollworm, *Pectinophora gossypiella* (Saunders), diapause, plant growth regulators, immature bolls, defruiting efficiency index, seed quality, fiber quality, seedling emergence, desiccation, defoliation, chemical termination.

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TABLE OF TEST RESULTS

Test	Test title	Location	Cultivar	Tables	Text Page
	1972				
1	General termination	Phoenix	S-4	1, 2	13
2	Do.	--do--	DPL 16	3, 4	13
	2,4-D effect on seed and seedlings	--do--	DPL 16	5, 6	13
3	General termination	--do--	S-4	7	13
4	Do.	--do--	DPL 16	8	13
5	Do.	Mesa	DPL 16	9	13
6	Do.	Marana	S-4	10	14
7	Do.	Safford	S-4	11	14
	Mean of 1972 tests			12	

Test	Test title	Location	Cultivar	Tables	Text Page
	1973				
8	Areawide test	Brawley	DPL 16	13	15
9	Do.	Yuma	DPL 16	14	15
10	Do.	Phoenix	DPL 16	15	16
11	Do.	--do--	S-4	16	16
12	Do.	Marana	S-4	17, 18	17
13	Do.	Safford	S-4	19	17
	Mean, areawide tests, 1973			20	
14, 15	Preliminary	Phoenix	S-4 DPL 16	21	18
16	2,4-D + chlorflurenol rates	--do--	DPL 16	22, 23, 24	18
17, 18	Termination methods	--do--	DPL 16	25	19
	1974				
19	Areawide test	Brawley	DPL 61	26	20
20	Do.	Yuma	DPL 16	27	20
21	Do.	Phoenix	DPL 16	28	21
22	Do.	--do--	S-4	29	21
23	Do.	Marana	DPL 16	30	21
24	Do.	Safford	S-4	31	22
	Mean, areawide tests, 1974			32	
25	Preliminary	Phoenix	DPL 16	33	22
26	2,4-D + chlorflurenol rates	--do--	DPL 16	34	23
27	TD-1123 rates	--do--	DPL 16	35	23
28	Treatment date	--do--	DPL 16	36	24
	2,4-D symptoms on seedlings	--do--	S-4	37	24
	1975				
29	Areawide test	Thermal	DPL 61	38	24

TABLE OF TEST RESULTS--Continued

Test	Test title	Location	Cultivar	Tables	Text Page
30	Do.	Brawley	DPL 61	39	25
31	Do.	Yuma	DPL 61	40	26
32	Do.	Phoenix	DPL 61	41	26
33	Do.	--do--	AZ 64	42	26
34	Do.	--do--	S-4	43	26
35	Do.	Marana	DPL 61	44	26
36	Do.	Safford	S-4	45	27
	Mean, areawide tests, 1975			46	
37	Preliminary	Phoenix	AZ 64, S-4	47	27
38	2,4-D, MCPA, and silvex rates	--do--	AZ 64	48	28
39	TD-1123 rates	--do--	AZ 64	49	28
40	Chlorflurenol and chlormequat rates	--do--	AZ 64	50	29
41	TD-1123 stratified harvest	--do--	AZ 64	51	29
42	Treatment date	--do--	AZ 64	52, 53	30
	1976				
43	Uniform test	--do--	DPL 61	54	30
44	Do.	--do--	AZ 64	55	30
45	Do.	--do--	S-5	56	30
	Mean, uniform tests, 1976			57	
46	Preliminary	--do--	AZ 64, S-5	58	31
47	MCPA rates	--do--	AZ 64	59	31
48	TD-1123 rates	--do--	DPL 61	60	32
49	TD-1123 and BAS 08300 rates	--do--	AZ 64	61	32
50	Chlorflurenol and chlormequat rates	--do--	AZ 64	62	33

TABLE OF TEST RESULTS--Continued

Test	Test title	Location	Cultivar	Tables	Text Page
51	TD-1123 weekly harvest	Phoenix	AZ 64	63, 64	33
	Comparison of experiment station and farm tests			65	

CHEMICAL TERMINATION OF LATE-SEASON COTTON FRUITING IN ARIZONA AND CALIFORNIA, 1972-76

By D. L. Kittock, H. Fred Arle, T. J. Henneberry, and L. A. Bariola[1]

INTRODUCTION

The concept of preventing formation, or removal, of late-season immature cotton (*Gossypium* spp.) bolls with plant growth regulators[2] to control the pink bollworm, *Pectinophora gossypiella* (Saunders), originated during the winter of 1970-71 (Kittock et al., *1973*).[3] This concept has since been referred to as "chemical termination of late season fruiting in cotton for insect control," or simply "chemical termination." The concept is based on the fact that most diapausing (overwintering) pink bollworm larvae develop in late-season bolls (after September 15) that do not mature and contribute to yield by normal harvest date. They do, however, provide oviposition sites and a source of food for pink bollworm. Furthermore, the pink bollworms have no important alternate host in which they can develop or survive. Thus, elimination or reduction of late-season bolls through the use of plant growth regulators could substantially reduce the magnitude of overwintering pink bollworm populations and delay buildup the following year. With proper timing of treatment, such a program should eliminate only those late bolls that are not expected to mature and would thus have minimal effect on cotton yield. Chemical termination evolved from early crop maturity cultural practices for pink bollworm control (Noble, *1969*) and effective reduction in pink bollworm overwintering populations by early defoliation and desiccation (Adkisson, *1962*).

Five tests were established on cotton in 1971 to evaluate the concept. Preliminary results of these tests (Kittock et al., *1972*) and the concept (Mauney et al., *1972*) were reported at the 1972 Beltwide Cotton Production Research Conferences, Memphis, Tenn. In the formal report on 1971 results, Kittock et al. (*1973*) suggested that the technique might also effectively control boll weevil, *Anthonomous grandis* (Boheman), and *Heliothis* spp. They concluded that the concept was promising, but plant growth regulator treatments available for use at that time were unsatisfactory.

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[2]See p. 11 for list of plant growth regulators mentioned in this publication.

[3]The year in italic after the author's name refers to Literature Cited, p. 9.

The results of subsequent research revealed a very high correlation between number of immature cotton bolls at time of first harvest and number of overwintering pink bollworms (Kittock et al., *1975*). Bariola et al. (*1976*) found 90 to 95 percent reduction in the number of diapausing pink bollworms with only small reductions in yield from chemical termination. A summary of uniform, areawide chemical termination tests, 1972-75, has been published (Kittock and Arle, *1977*).

This bulletin presents detailed data from chemical termination tests in Arizona and California for 1972 through 1976 and includes data from all tests designed to evaluate chemical termination treatments on small plots. The report, with one exception, does not include data from strip tests on farms (0.2 to 1.5 acres/plot) in which the primary objectives were to evaluate effects of chemical termination on pink bollworm populations.

Materials and Methods

Cotton was grown in conventional field-type plantings of 40-inch spacing between rows. Plots were four rows wide and from 34 to 65 feet long. Most tests consisted of randomized blocks with four replications. Tests 28 and 42 were split plots with four replications. The center two rows of each plot were harvested with a mechanical spindle picker for yield, and a second pick was made in several tests. In a few tests, plots were handpicked.

Tests in Arizona were located at University of Arizona research stations at Phoenix (Cotton Research Center, elevation 1,100 feet), Mesa (1,100 feet), Marana (2,000 feet), Safford (2,900 feet), and Yuma (120 feet). In California, tests were located at the USDA Imperial Valley Conservation Research Center at Brawley (-100 feet) and on the Marshburn Brothers farm at Thermal (-30 feet).

Treatments were applied to Upland cotton (*G. hirsutum* L.) or American Pima cotton (*G. barbadense* L.). Upland cotton cultivars were Delta Pine and Land Company (DPL) 16, DPL 61, and AZ 64 (Acala). American Pima cultivars were Pima S-4 and Pima S-5.

Plant growth regulators were applied with a two-row hand sprayer. Identification of chemicals evaluated and dates and rates of application are shown for each test in the Appendix. In early tests, plots were treated at the rate of 40 gallons of water solution (without surfactant) per acre. In later tests, the application rate was reduced to 20 gal/acre.

In addition, a number of plant growth regulators were applied to one or more plots, usually in July and early August, for preliminary observation. The growth regulators that gave promising results were included in the testing program described above. Napthaleneacetic acid and 2,4,5-T appeared unpromising and were not tested further.

Immature bolls were counted on the center two rows of each plot just before or just after first harvest. All plots in a test were counted on the same day. Spindle pickers usually remove 5 to 10 percent of the immature bolls and no attempt was made to adjust the data accordingly. Immature bolls are defined as those that have begun to increase in size after flowering to bolls that are physiologically mature, but have not opened enough to be readily machine picked.

The defruiting efficiency (DE) index is the sum of lint yield reduction expressed as a percentage of the untreated check plus the number of immature bolls

expressed as a percentage of the check. Treatment means were used to compute DE indexes. For these studies, a DE index of less than 10 was considered excellent and 10 to 20 was considered fair.

Seed cotton was picked with a spindle picker and weighed in the field. In most tests, the entire seed cotton sample or a subsample was then stored indoors for at least 7 days. Samples were reweighed prior to cleaning and ginning. Seed cotton samples were cleaned in a laboratory cleaner one or two times, depending upon the amount of trash present, then weighed and ginned. Fuzzy seed and lint were then weighed separately. From these data, gin turnout, lint percentage, and trash percentage were calculated. Lint yield of plots that were subsampled was calculated by multiplying gin turnout times seed cotton weight.

Fiber was subsampled and standard fiber analyses were performed in the ARS Fiber Laboratory at the University of Arizona Cotton Research Center, Phoenix, Ariz. Fiber was analyzed from three replications of each test during 1972, 1973, and 1974 and four replications for most 1975 and 1976 tests.

Subsamples of seed from each plot were acid delinted, and the seed that floated during the wash following delinting (floaters) were counted to determine percent floaters and discarded. The remaining seed were dried, and mechanically or insect damaged seed were removed. In most cases, two 100-seed samples were weighed and packaged from each plot. One 100-seed package from each plot of 1972 and 1974 tests and most of the 1975 tests was planted about one inch deep in sand flats in the greenhouse during the following winter and spring to determine emergence. Seedling emergence was counted daily for 14 days. The average number of days required for seedling emergence was computed for each plot. Germination was determined on 100-seed samples for two replications for the 1973 tests. The other 100-seed samples obtained from each plot from 1972, 1974, 1975, and 1976 tests were planted in the field the following springs, respectively, at the Cotton Research Center, Phoenix, to determine emergence. Emergence counts were made and average number of days to emerge were calculated for each plot. The seedlings with 2,4-D-type symptoms were counted also for certain tests. Normal emergence occurred with seed harvested during 1972, and counting was discontinued at 28 days after planting. Because cold weather delayed emergence of seedlings from the 1974 tests, emergence was counted for 42 days. A hail and rainstorm during peak emergence of 14 of the 1975 tests killed many plants, and the subsequent crust that formed prevented further emergence. Therefore, the last emergence count was made 18 days after planting. No counts of dead seedlings were possible for 1974 and 1975 tests. Two replications of 1975 test 42 were planted late. Final emergence count on this test was 17 days after planting. Final emergence count of seed from 1976 was 21 days after planting.

In 1975 and 1976, the effect of plant growth regulator treatments on percent defoliation was visually estimated prior to harvest for each plot of most tests. Two independent estimates of defoliation were made and averaged.

The six defoliants and desiccants used as harvest aids in these tests were: Sodium chlorate, Mag Chlor (magnesium chlorate), paraquat (1,1'-dimethyl-4,4'-bipyridinium ion), DEF (S,S,S-tributylphosphorotrithioate), Boll's Eye, and PHYTAR 560 (dimethyl-arsinic acid).

All data, except DE index, were subject to analysis of variance. When means differed significantly at the 5-percent level (F test), all means were compared by Duncan's multiple range test comparison at the 5-percent probability level. More specific materials and methods for each test are given in the Appendix.

RESULTS AND DISCUSSION

In most tests, we attempted to time application of treatments to give a balance between immature bolls remaining on the plant at harvest and yield reduction. Such a balance was needed to most effectively evaluate chemical termination treatment effects on plant response. Furthermore, about one half of these tests was planted to Acala or Pima cottons (about 10 percent of commercial acreage), because they have more late bolls and thus give greater differences between treatments (higher DE index) and the check. Interpretation of results of individual tests in the first part of this discussion does not always agree with the summary interpretation at the end of the discussion.

Reduced yields in these tests do not necessarily mean that lowered yield must be expected for insect control. The date of application of chemical termination treatment for insect control needs to be evaluated separately with careful consideration given to the economic advantages of reduced insect losses and control costs as compared with the risk involved in reduced cotton yields.

1972

Preliminary results in 1971 and results of the 1972 season clearly demonstrated that two general response categories occurred among successful plant growth regulators. The first group consisted of those regulators with fast initial activity but lacking persistence such as 2,4-D and Pennwalt TD-1123. The second group was much slower in causing initial termination effects but was more persistent in maintaining control. These regulators included chlormequat and chlorflurenol. Mixtures of the two types of plant growth regulators, for example, 2,4-D plus chlormequat, produced more effective chemical termination than either used alone in six of seven tests as indicated by DE index and immature boll counts (tables 1, 3, 7, 8, 9, 10, 11, and 12).

When these materials were used alone, 2,4-D was most effective for chemical termination. Chlormequat and chlorflurenol (at the higher rates) were less effective. DPX 1840 and chlorflurenol at low application rates were essentially ineffective. TD-1123 alone was effective for a short period followed by recovery and excessive fruiting. Chlormequat alone appeared to be more effective on Pima cotton than on Upland cotton. Effects of other plant growth regulators did not differ appreciably among cultivars.

Seedling emergence in greenhouse and field was generally reduced and delayed from seed of plots that had been treated with 2,4-D the previous year. Seedling emergence was slightly reduced in chlorflurenol and TD-1123 treated plots. Seed cotton harvested from plots treated with 2,4-D tended to have more trash and, thus, a lower gin turnout. Treatments tended to reduce fiber quality slightly, but the effect did not appear great enough to be important.

Data on flowering and boll set in tests 1 and 2 are given in tables 2 and 4. The results are consistent with immature boll data on those treatments.

Seed from tagged bolls in 2,4-D plots in tests 1 and 2 were planted in sand flats in the greenhouse and compared with seed from the untreated check. There appeared to be a slight reduction in seedling emergence from bolls that matured 14 days after 2,4-D application (table 5). Emergence was moderately reduced in bolls maturing 21 days after treatment. The most severe reduction occurred when

bolls matured 49 or more days after treatment with 2,4-D. The effects were greater on DPL 16 than on Pima S-4. Time to emerge and severity of 2,4-D symptoms on true leaves generally were inversely related to percent emergence (table 6).

Spring emergence of pink bollworm moths into cages was very low in test 5 (table 9), but tended to correlate well with immature boll counts at harvest (r = 0.726). In test 6 (table 10), correlation was much higher between immature bolls and pink bollworms found in late fall (r = 0.977**), but correlation was lower (r = 0.774) for spring emergence. In test 6, 2,4-D plus chlormequat reduced immature bolls on November 8 by 99 percent, pink bollworms in the fall by 94 percent, and pink bollworms in the spring by 41 percent. We believe the reduced effects on pink bollworm populations in the spring are at least partially due to plot contamination through cross disking and through "floating" to level the field and to inherent limitations of soil sampling procedures for determining soil insect populations.

1973

2,4-D plus chlormequat and 2,4-D plus chlorflurenol treatments were comparable in most tests (table 20); however, 2,4-D plus chlormequat was superior in the Safford test (table 19). Chlorflurenol and 2,4-D increased trash content and, therefore, reduced gin turnout. The increase in lint percent by two treatments was probably the result of trash in the lint rather than increased lint percent. Low micronaire of the check plots was probably the result of more late bolls in the check rather than a treatment effect on other plots.

Doubling the application rate of 2,4-D (0.067 pounds active ingredient per acre) had a greater adverse effect on yield than a beneficial effect on reduction of immature bolls (table 21). Data from the 2,4-D plus chlorflurenol rates test suggested that decreased rates of 2,4-D in the combination were possible (table 22).

Defoliation in 1973 was not very effective throughout Arizona including the Cotton Research Center. However, we noted that defoliation on the eight plots treated with TD-1123 plus chlorflurenol in tests 14 and 15 was excellent prior to harvest as compared with other treatments and checks. TD-1123 plus chlorflurenol was also effective for reducing immature bolls of DPL 16, but not for those of Pima S-4 (table 21).

No residue of 2,4-D was found in seed from the 2,4-D plus chlorflurenol treatment in test 12 (table 18). Residue of chlorflurenol was found at up to 0.12 parts per million in crude oil, but no residue was found in refined oil.

Early defoliation and early desiccation reduced lint yield as compared with early chemical termination in test 17, but not in that of test 18 (table 25). The early desiccation treatment had the fewest immature bolls for the first treatment date in test 17 and chemical termination had the fewest in test 18. Defoliation was least effective in both tests. On an average, the DE index was lowest for chemical termination, second for desiccation, and highest for defoliation at all treatment dates. Chemical termination was superior to defoliation for reduction of pink bollworm on all treatment dates and desiccation on two of three dates, though differences were not significant. Defoliated and desiccated cotton had reduced fiber uniformity and reduced micronaire for first pick. Yarn

strength was somewhat inconsistent, but generally the first treatment date of desiccation and defoliation had reduced strength, particularly for second pick. There was more loss in combing from chemical termination than from desiccation or defoliation apparently due to more trash from 2,4-D effects. The second and third defoliations in these tests were part of normal harvest preparations. Desiccation is occasionally used for the same purpose.

1974

The best chemical termination treatment in 1974 was 2,4-D plus chlormequat (table 32). Lower application rates of both 2,4-D and chlorflurenol in mixture reduced effectiveness of the treatment as measured by number of immature bolls at harvest. TD-1123 plus chlorflurenol was only moderately successful and resulted in reduced lint yield, field seedling emergence, and fiber strength. Apparently, TD-1123 treatments needed to be applied 10 to 14 days later than 2,4-D treatments for satisfactory results. Pink bollworm populations were reduced by 2,4-D plus chlormequat and 2,4-D plus chlorflurenol (table 29).

MCPA and silvex showed promise as substitutes for 2,4-D (table 33) and had the advantage of not causing leaves, squares, and flowers to "freeze" on the plants as did 2,4-D. Also, emergence of seedlings from treated plots was not reduced. The problem of leaf freeze was not solved by 2,4,5-T, which was tested in observational plots.

BAS 0660 appeared promising as a persistent plant growth regulator. However, its production was discontinued after the 1974 season, and further work with the compound was terminated.

Three rates of 2,4-D and three rates of chlorflurenol were tried as mixtures in all combinations (table 34). In general, increased rates of 2,4-D to 0.025 lb ai/acre and increased chlorflurenol to 0.625 lb ai/acre progressively decreased the number of immature bolls at harvest. None of the other parameters measured were significantly different from the check.

TD-1123 at four application rates, each in mixture with chlorflurenol, reduced immature bolls and increased floaters for the first pick, which was 35 days after treatment (table 35). On second pick, 23 days later, yield, immature bolls, field emergence, and most fiber quality parameters were reduced with greater reduction caused by the higher TD-1123 rates. Floaters were increased as other parameters were decreased. The greater number of floaters from treated cotton and reduced micronaire for second pick suggests that carbohydrate transfer to bolls was reduced by TD-1123 treatment. This reduction probably resulted from partial formation of an abscission layer. The immature boll data indicate that 0.5 lb ai/acre of TD-1123 was not an adequate treatment rate, and 1.5 lb ai/acre was more than needed, resulting in adverse effects on cotton yield.

A test with six dates of treatment application was established to determine the proper time to treat with the several treatments used in 1973 (table 36). On the basis of the DE index, 2,4-D and 2,4-D plus chlorflurenol were most effective when applied on August 26. The best date for 2,4-D plus chlormequat was August 30, and for chlorflurenol used alone, August 21. The results indicated that all treatments were about equally effective if applied at the correct time. However, based on other test results, we believe that chlorflurenol and 2,4-D would have been less effective if there had been more fruiting during August and September.

Data on Pima cotton seedlings from 2,4-D treated plots indicated that most seedlings showing 2,4-D type symptoms on true leaves soon resumed normal growth (table 37). Fifty-two percent of the plants with 2,4-D symptoms had normal leaves at node two and above. One plant produced eight leaves with 2,4-D symptoms before resuming normal growth.

1975

MCPA was tested as a replacement for 2,4-D in most 1975 tests. It was hoped that use of MCPA would eliminate the problems of reduced seedling emergence from treated cotton and "freezing" of leaves, squares, and flowers to plants. MCPA accomplished those objectives (table 48), but was less efficient than 2,4-D for chemical termination of cotton (table 46). Higher application rates of MCPA might overcome this problem.

TD-1123 plus chlorflurenol gave variable results (table 46). The combination of TD-1123 plus chlormequat appeared to be an effective treatment (table 47). Time of application appeared to be a major factor in TD-1123 effectiveness. At Safford (table 45), TD-1123 plus chlorflurenol was not very effective on Pima cotton. That could be due to the cooler weather of the Safford area. However, TD-1123 may be less effective for chemical termination on Pima cotton (tables 43, 45). TD-1123 improved subsequent defoliation in most tests as compared with the check and other treatments.

The results obtained in test 38 showed a particularly large amount of leaf trash in lint samples after cleaning. By use of the Shirley Analyzer, it was shown that samples from 2,4-D treated plots had significantly more trash than the check and significantly reduced reflectance from the fiber prior to cleaning (table 48). Results obtained with silvex were intermediate between the check and 2,4-D. Leaves in silvex-treated plots did not freeze.

TD-1123 at four application rates with chlorflurenol gave a similar but lesser response (tables 49, 51) as compared with that of the 1974 test (table 35). Higher rates of chlorflurenol or chloremequat, in combination with MCPA, progressively decreased immature bolls and lint yield at harvest (table 50).

The date of treatment test indicated that TD-1123 plus chlorflurenol was most effective when applied at the latest application date, September 11 (table 52). By extrapolation, we estimated that treatment on September 20 would have been necessary to prevent any yield loss. The remaining treatments tested were relatively ineffective. TD-1123 plus chlorflurenol had essentially no effect on immature bolls 10 days old at time of treatment, but 97 percent of 3-day-old bolls abscised and few bolls 4 to 9 days old developed (table 53). Flowering was reduced at a much slower rate.

1976

TD-1123 plus chlormequat or chlorflurenol appeared to have been applied too late for best effectiveness for November 3 harvest, particularly for the Pima S-5 cultivar (tables 54 to 57). The 1.0 lb ai/acre rate of TD-1123 with either chlorflurenol or chlormequat seemed to be most satisfactory (table 60). TD-1123 had very little effect on quality of fiber and seed in 1976. This is in contrast

to considerable effects from earlier treatment dates in previous years. TD-1123 increased subsequent defoliation in most tests. Rates of TD-1123 at 0.5 lb ai/acre, or above, increased defoliation (table 60), but defoliation was not increased at 0.25 lb ai/acre (table 61). The highest rate (2.0 lbs ai/acre) of chlorflurnol and chlormequat proved to be most effective for chemical termination when mixed with TD-1123 (table 62). MCPA was not equivalent to 2,4-D at any of the rates tested (table 59). Dicamba, Velsicol 4207, and Nor-Am 49537 showed some promise as fast-acting plant growth regulators for chemical termination (table 58).

TD-1123 plus chlormequat, MCPA plus chlormequat (tables 54, 55, 56, 57), dicamba plus chlormequat, Velsicol 4207 plus chlormequat, and TD-1123 plus 2,4-D plus chlormequat (table 58) markedly reduced pink bollworms.

SUMMARY

Mixtures containing one fast-acting, but not persistent, plant growth regulator, and one slow-acting, but persistent plant growth regulator, were more satisfactory than single plant growth regulators. Chlormequat and chlorflurenol proved to be satisfactory, slow-acting, but persistent, plant growth regulators. The most consistently successful fast-acting plant growth regulator was 2,4-D at 0.025 lb ai/acre in a mixture, but it reduced emergence of seed harvested from treated plots and froze leaves, squares, and flowers on plants. Reducing the application rate of 2,4-D to 0.017 lb ai/acre and increasing the rate of chlormequat or chlorflurenol gave about as good chemical termination as the 0.025 and 0.5 lb ai/acre rates for mixtures and minimized the seedling emergence problem but did not help the leaf freeze problem.

We tested several other phenoxy and similar plant growth regulators in hopes of retaining only the desirable effects of 2,4-D. MCPA, silvex, dicamba, and Velsicol 4207 have not caused leaf freeze and have not reduced seedling emergence. MCPA was tested extensively and found unsatisfactory for chemical termination. The remaining three have performed well enough to justify further testing. Napthaleneacetic acid and 2,4,5-T were observed to be unsatisfactory for chemical termination.

TD-1123 at 1.0 lb ai/acre, when mixed with chlormequat or chlorflurenol and applied about 14 days later than 2,4-D treatments, gave good chemical termination of Upland cotton. TD-1123 has not given good results for chemical termination of Pima cotton. TD-1123 application at 0.5 lb ai/acre rate or higher produced greatly improved results from subsequent defoliation treatment of both Upland and Pima cotton. Nor-Am 49537 appeared to be similar to TD-1123 in its action, but proper application rate is reported to be much more sensitive to temperature changes.

The best chemical termination treatment in each test (lowest DE index) gave an average DE index of 18. This consisted of 10 percent yield reduction plus 8 percent as many immature bolls as the check. DE index of southeast-type cultivars (90 percent of all cotton in the pink bollworm area of Arizona and California), however, was 10.5 with 7 percent yield reduction and immature bolls at 3.5 percent of the check. The index of Pima (about 9 percent of total acreage) was 22, and Acala (about 1 percent of total acreage) was 28.

From 1973 through 1976, chemical termination tests were being held on large plots (0.2 to 1.5 harvested acres) to evaluate treatments for control of pink bollworms on farms. These tests, which are not reported here, had the same chemical termination treatments as one of the treatments in the areawide tests for that year. We noted that comparable treatments in tests with the same cultivars, and in the same geographical area, had reduced lint yields (expressed as percentage of untreated check) of cotton on experiment station plots each year and increased lint yields on farm plots each year (table 65). The differences between experiment stations and farms were significant in 3 of 4 years (2 years at the 0.20 level) and the 4-year average. More late-season pink bollworms on farms and better harvest efficiency of treated plots on farms appear to at least partially account for these differences. These results could be an important factor in acceptance and implementation of chemical termination since most published data on chemical termination are from experiment station tests.

The effect of removing late-season cotton fruiting forms on overwintering pink bollworm populations was evaluated in 10 tests for a total of 27 treatments. These 27 chemical termination treatments, some more effective than others, reduced immature bolls at harvest an average of 83 percent and reduced number of diapausing pink bollworms an average of 79 percent ($r = 0.66^{**}$).

Correct timing of application of plant growth regulators is of utmost importance in achieving the desired effect of removing source of food and oviposition sites for late-season development and survival of cotton insect pests. Many environmental factors may affect the interaction of the physiological functions of the cotton plant and the role of plant growth regulators in preventing fruiting body formation and abscission of bolls already developed. Continued and expanded studies need to be developed and coordinated to determine optimum times for application under the different growing conditions across the Cotton Belt.

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APPENDIX

Glossary

Chemical termination.--Technique of preventing late-season boll formation on cotton plants without appreciably affecting the plant or developing bolls by application of plant growth regulators.

Dead seedlings.--Seedlings that die in field plantings of 100 seed from seed of previous years' cotton plots.

Defoliation.--Application of chemicals to plants to cause abscission of leaves.

DE index.--Defruiting efficiency (DE) index is the sum of reduction in lint yield (percentage of check) and immature bolls (percentage of check) from chemical termination treatment.

Desiccation.--Application of chemicals to plants to kill, but not abscise, leaves.

Fiber uniformity.--Fifty-percent span divided by 2.5-percent span and multiplied by 100.

Floaters.--Light seed that float in the wash following acid delinting, expressed as percentage of total seed.

Floating.--Process involving dragging a long rigid frame across a field to move soil from high spots to low spots.

Gin turnout.--Amount of lint obtained from harvested seed cotton expressed as percentage of the seed cotton.

Hunters B and R_d.--Hunter's B value is a measure of increasing yellowness of the cotton. R_d is the percentage of reflectance; the higher the value, the lighter the cotton. These measurements were determined by the Nickerson-Hunter colorimeter (Spinlab model).

Immature bolls.--Bolls that are either increasing in size or that have reached full size, but are not yet open enough to be picked with a spindle picker.

Lint percent.--Amount of lint obtained from seed cotton that has been cleaned of trash expressed as percentage of cleaned seed cotton.

Lint yield.--Pounds of lint produced per acre. Estimated by ginning and cleaning the seed cotton sample.

Loss in combing.--Loss in weight by fiber in the combing process expressed as percentage of original weight.

Micronaire.--Fineness of the sample taken from the ginned lint measured by the micronaire (resistance to airflow in a given weight of cotton) and expressed in standard (curvilinear scale) micronaire units.

Seed cotton.--Picked cotton that contains both lint and seed and can contain some trash.

Seed weight.--Weight of 100 seed in grams. Floaters and insect and mechanically damaged seed were discarded before obtaining 100 seed samples.

Spindle picker.--Mechanical cotton picker that picks cotton, but leaves cotton bur and most of the leaf trash.

2.5-percent span and 50-percent span.--Fiber length measured on the Digital Fibrograph. The distance spanned by a specified percentage of the fibers in the test specimen, where the initial starting point of the scanning in the test is considered 100 percent. The *2.5-percent span length* is the length, in inches, on the test specimen spanned by 2.5 percent of the fibers scanned at the starting point. The 2.5-percent span length approximates classer's staple. The *50-percent span length* is the length, in inches, on the test specimen spanned by 50 percent of the fibers scanned at the starting point.

T_1.--Fiber strength of a bundle of fibers measured on the Stelometer with the jaws holding the fiber bundle separated by a 1/8-inch spacer, expressed in grams-force per tex.

Tex.--Linear density of fibers, filaments, and yarns expressed as the weight, in grams, of 1,000 m of fiber or yarn.

Trash percent.--Amount of trash obtained from harvested and cleaned seed cotton by difference in weight between field sample and cleaned sample and expressed as percentage of the cleaned sample.

True leaves.--Leaves that develop above the two cotyledons.

Yarn tenacity, grams-force-tex.--Strength of 27 tex yarn, expressed as grams-force (gf) per tex.

Plant Growth Regulators and Tests in Which They Were Used

BAS 0660 - *N*-dimethyl-morpholine chloride
Used alone: 14, 15
Used in a mixture: 25

BAS 08300 - 1,1-dimethyl-piperidinium chloride
Used alone: 49
Used in a mixture: 37, 49

Chlorflurenol - methyl 2-chloro-9-hydroxyfluorene-9-carboxylate
Used alone: 1-13, 28, 42
Used in a mixture: 8-40, 42-45, 48, 50

Chlormequat - (2-chloroethyl)trimethyl ammonium chloride
Used alone: 1, 2, 5-7
Used in a mixture: 1-13, 19-25, 28-37, 40, 42-48, 50

Cytex - A natural extract with cytokinin activity
Used alone: 46

DPX 1840 - 3,3*a*-dihydro-2-(*p*-methoxyphenyl)-8*H*-pyrazolo-[5,1-a]isoindol-8-one
Used alone: 1, 2
Used in a mixture: 3, 4

Dicamba - 3,6-dichloro-*o*-anisic acid
Used alone: 37
Used in a mixture: 37, 46

Glyphosate - *N*-(phosphonomethyl)glycine
Used alone: 25, 37
Used in a mixture: 46

MCPA - [(4-chloro-*o*-tolyl) oxy]acetic acid
Used alone: 29-36, 42
Used in a mixture: 25, 29-38, 40, 42-45, 47

Napthaleneacetic acid - 1-naphthaleneacetic acid
Used alone: In observation plots

Nor-Am 49537 - *N*-phenyl-*N*-1,2,3-thiadiazol-5-ylurea
Used alone: 46

Silvex - 2-(2,4,5-trichlorophenoxy)propionic acid
Used in a mixture: 25, 38

2,4-D - (2,4-dichlorophenoxy)acetic acid, dimethylamine salt
Used alone: 1-15, 19-24, 28
Used in a mixture: 1-13, 16-26, 28, 38, 43-47

2,4,5-T - (2,4,5-trichlorophenoxy)acetic acid
Used in a mixture: In observation plots

TD-1123 - 3,4-dichloroisothiazole 5-carboxylic acid
Used alone: 1-4, 41, 49, 51
Used in a mixture: 14, 15, 19-25, 27, 29-37, 39, 42-46, 48-50

Velsicol 4207 - (phenylimino)di-2,1-ethanediyl bis(3,6-dichloro-2-methoxybenzoate)
Used in a mixture: 46

Mixtures of Plant Growth Regulators and Tests in Which They Were Used

Chlormequat + DPX 1840: 3, 4
Dicamba + chlorflurenol: 37
Dicamba + chlormequat: 46
Glyphosate + chlormequat: 46
MCPA + BAS 08300: 37
MCPA + chlorflurenol: 25, 29-36, 38, 40, 42
MCPA + chlormequat: 29-36, 40, 42-45, 47
Silvex + chlorflurenol: 25, 38
2,4-D + BAS 0660: 25
2,4-D + DPX 1840: 3, 4
2,4-D + chlorflurenol: 8-13, 16-26, 28, 38
2,4-D + chlormequat: 1-13, 19-24, 28, 43-45, 47

2,4,5-T + chlorflurenol: In observation plots
TD-1123 + BAS 0660: 25
TD-1123 + BAS 08300: 37, 49
TD-1123 + MCPA + chlorflurenol: 37
TD-1123 + 2,4-D + chlormequat: 46
TD-1123 + chlorflurenol: 14, 15, 19-24, 27, 29-36, 39, 42-45, 48, 50
TD-1123 + chlormequat: 25, 37, 43-45, 48, 50
Velsicol 4207 + chlormequat: 46

Materials and Methods Used in Individual Tests

1972 Tests

Tests: 1, 2, 3, and 4

Title: General termination tests

Purpose: To examine new and previously tested plant growth regulators, combinations of plant growth regulators, and application rates

Location: University of Arizona Cotton Research Center, Phoenix, field D-4

Cultivars: DPL 16 (tests 2 and 4) and Pima S-4 (tests 1 and 3)

Replications: 4

Plot size: 4 rows wide by 36 feet long

Experimental design: Randomized blocks

Planting date: Mar. 18

Treatment dates: Tests 1 and 2, Aug. 28; tests 3 and 4, Aug. 29

Last irrigation: Aug. 30

Defoliation: Nov. 10, sodium chlorate at 2 gal/acre (5.6 lb ai/acre) plus paraquat at 0.5 pint/acre (0.125 lb ai/acre)

Harvest: Nov. 27 by spindle picker

Immature boll count: After picking on Nov. 27

Test: 5

Title: General termination test

Purpose: To test the effects of chemical termination treatments on overwintering pink bollworm populations

Location: University of Arizona Mesa Experiment Station, fields F-3 and F-4

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 35 feet long

Experimental design: Randomized block

Planting date: Mar. 29

Treatment date: Aug. 22

Last irrigation: Aug. 10

Harvest: Handpick completed Oct. 29

Immature boll counts: Oct. 30

Pink bollworm: One cage per plot (0.001 acre) was established in early spring and moth counts were made into July

Additional information: No insecticides were used in this test. Pink bollworm infestation was minor to mid-August, but approached 100 percent by early September

Test: 6

Title: General termination test

Purpose: To test the most promising chemical termination treatments under a different climatic and farm management system

Location: University of Arizona Marana Experiment Station, field C-3

Cultivar: Pima S-4

Replications: 5

Plot size: 4 rows wide by 65 feet long

Experimental design: Randomized block

Planting date: Apr. 10

Treatment date: Aug. 24

Defoliation: None

Last irrigation: Aug. 10

Harvest: Not harvested, excessive pink bollworm damage (60 percent loss)

Immature boll count: Nov. 8

Pink bollworm: Nov. 14 and 22, sampled 10 feet of row per plot for pink bollworm in ground trash and bolls on each date. Spring emergence was determined from 2 cages (0.001 acre/cage) per plot

Test: 7

Title: General termination test

Purpose: To test the most promising chemical termination treatments under a different climatic and farm management system

Location: University of Arizona Safford Experiment Station, field H

Cultivar: Pima S-4

Replications: 5

Plot size: 4 rows wide by 47 feet long

Experimental design: Randomized block

Planting date: Apr. 8, 1972

Treatment date: Aug. 25

Last irrigation: Aug. 22

Defoliations: Oct. 9 and 26. Sodium chlorate at 2 gal/acre (5.6 lb ai/acre) plus paraquat at 0.5 pint/acre (0.125 lb ai/acre)

Freeze: Nov. 1

Harvest: Nov. 7

Immature boll count: Nov. 7 after picking

1973 Tests

Test: 8

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: Imperial Valley Conservation Research Center, Brawley, Calif.

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 27

Treatment date: Aug. 22

Last irrigation: Sept. 19

Defoliations: Oct. 18 and 31, 2 pints DEF/acre (1.5 lb ai/acre) plus 0.5 pint paraquat/acre (0.125 lb ai/acre)

Harvest: Nov. 27 by spindle picker

Immature boll count: Nov. 28

Test: 9

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Yuma Valley Experiment Station, new farm, fields Q1 and Q2

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting dates: Mar. 27 and 28

Treatment date: Aug. 22

Last irrigation: Sept. 6

Defoliation: None

Harvests: Nov. 5 and 29 by spindle picker

Immature boll count: Nov. 5 after picking

Additional information: This field had very poor growth and production early in the season; therefore, extra nitrogen fertilizer and extra irrigation were given late in the season to increase the top crop

Test: 10

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Cotton Research Center, Phoenix, field D-3

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 36 feet long

Experimental design: Randomized block

Planting date: Apr. 10

Treatment date: Aug. 27

Last irrigation: Sept. 12

Defoliations: Oct. 4 and 21, 2 gal/acre of sodium chlorate (5.6 lb ai/acre) plus 0.5 pint paraquat/acre (0.125 lb ai/acre)

Harvest: Nov. 6 with spindle picker

Immature boll count: Nov. 7

Test: 11

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Cotton Research Center, Phoenix, field D-2

Cultivar: Pima S-4

Replications: 4

Plot size: 4 rows wide by 36 feet long

Experimental design: Randomized block

Planting date: Apr. 10

Treatment date: Aug. 27

Last irrigation: Sept. 12

Defoliations: Oct. 4 and 21. Sodium chlorate at 2 gal/acre (5.6 lb ai/acre) plus 0.5 pint of paraquat/acre (0.125 lb ai/acre)

Harvest: Nov. 21 with spindle picker

Immature boll count: Nov. 28

Additional information: Less late fruit set in this test than normal for Pima cotton

Test: 12

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Marana Experiment Station, field A-1

Cultivar: Pima S-4

Replications: 3

Plot size: 4 rows wide by 58 feet long

Experimental design: Randomized block

Planting date: Apr. 12

Treatment date: Aug. 31

Last irrigation: Sept. 13

Defoliation: Oct. 23, sodium chlorate at 2.5 gal/acre (7.0 lb ai/acre)

Harvest: Nov. 23 by spindle picker

Immature boll count: Nov. 27

Additional information: This test had heavy flowering and fruit set in August and September. Fall weather was favorable for maturing late-set bolls

Seed from 3 treatments was sent to Oil Seeds Products Laboratory, Texas A & M University. They processed the seed and obtained 7 fractions (table 18). These fractions were analyzed for residue by the Department of Analytical Services, Texas A & M University

Test: 13

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Safford Experiment Station, field C-1

Cultivar: Pima S-4

Replications: 4

Plot size: 4 rows wide by 45 feet long

Experimental design: Randomized block

Planting date: May 7

Treatment date: Aug. 29

Last irrigation: Sept. 5

Defoliations: Oct. 18 and Nov. 13. Sodium chlorate at 2 gal/acre (5.6 lb ai/acre) plus paraquat at 0.5 pints/acre (0.125 lb ai/acre)

Harvest: Nov. 20 with spindle picker

Immature boll count: Nov. 20

Additional information: Plants in this test flowered and fruited profusely in August and September

Tests: 14 and 15

Title: Preliminary tests

Purpose: To evaluate new plant growth regulators, new mixtures of plant growth regulators, and new application rates

Location: University of Arizona Cotton Research Center, Phoenix, fields D-2 and D-3

Cultivars: DPL 16 and Pima S-4

Replications: 4

Plot size: 4 rows wide by 36 feet long

Experimental design: Randomized block

Planting date: Apr. 10

Treatment date: Aug. 27

Last irrigation: Sept. 12

Defoliation: DPL 16 - Oct. 4, 2 gal sodium chlorate/acre (5.6 lb ai/acre) plus 0.5 pint paraquat/acre (0.125 lb ai/acre)

Both cultivars received the same defoliation treatment on Oct. 21

Harvests: DPL 16, Nov. 6; Pima S-4, Nov. 21 with spindle picker

Immature boll counts: DPL 16, Nov. 7; Pima S-4, Nov. 28

Additional information: Both tests were stressed for water after mid-August. Defoliation was not effective in either test. Ginning data of Pima S-4 were mislabeled in several cases. Consequently, gin turnout, lint percent, and trash percent were not determined for Pima S-4

Test: 16

Title: 2,4-D plus chlorflurenol rates test

Purpose: To test several combinations of application rates of 2,4-D and chlorflurenol in mixture

Location: University of Arizona Cotton Research Center, Phoenix, field D-3

Cultivar: DPL 16

Replications: 3

Plot size: 4 rows wide by 35 feet long

Experimental design: Randomized block

Planting date: Apr. 10

Treatment date: Aug. 30

Last irrigation: Sept. 12

Defoliations: Oct. 4 and 21, 2 gal sodium chlorate/acre (5.6 lb ai/acre) plus 0.5 pint of paraquat/acre (0.125 lb ai/acre)

Harvest: Nov. 6 with spindle picker

Immature boll count: Nov. 7

Additional information: This test was water stressed in late August, and flowering and fruiting were at a low level. Extra irrigation late in the season caused resumed growth and fruiting in the fall

Tests: 17 and 18

Title: Termination methods

Purpose: To compare chemical termination, defoliation, and desiccation as methods for eliminating late-season immature bolls

Location: University of Arizona Cotton Research Center, Phoenix, fields G-3 and D-3

Cultivar: DPL 16

Replications: 4

Plot sizes: Test 17, 4 rows wide by 50 feet long; test 18, 4 rows wide by 36 feet long

Experimental design: Randomized block

Planting dates: Test 17, Apr. 6; test 18, Apr. 10

Treatment dates: See table 25

Last irrigation: Sept. 12

Defoliations: Test 18, except treatments 6 and 9, which were covered, was treated with 2 gal of sodium chlorate per acre (5.6 lb ai/acre) plus paraquat at 0.5 pint/acre (0.125 lb ai/acre) on Oct. 4. Both tests received the above treatments on Oct. 21

Harvests: Test 17, Nov. 7 and Dec. 17; test 18, Nov. 6, all with spindle picker

Immature boll counts: Test 17, Nov. 8; test 18, Nov. 6, both after harvest

Treatments: 2,4-D plus chlorflurenol were applied at 0.025 lb ai/acre for 2,4-D plus 0.5 lb ai/acre for chlorflurenol. DEF plus paraquat was at 3 pints/acre (2.25 lb ai/acre) for DEF plus 0.5 pint/acre (0.125 lb ai/acre) for paraquat. Desiccation was with 3 pints of paraquat/acre (0.75 lb ai/acre)

Pink bollworm: Samples consisted of 3 feet of 1 row per plot with sampling beginning on Dec. 10

Additional information: Test 17 received limited insecticide treatment, whereas test 18 received normal farm insecticide treatments. Test 17 had very rank growth, up to 9 feet tall, and much late flowering and fruit set. Test 18 plants were short and had set most of their fruit by Sept. 1. Treatments did not penetrate the leaf canopy in test 17

1974 Tests

Test: 19

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: Imperial Valley Conservation Research Center, Brawley, Calif.

Cultivar: DPL 61

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 8

Treatment date: Sept. 5

Last irrigation: Sept. 16

Defoliations: Oct. 30 and Nov. 19, 2 pints DEF/acre (1.5 lb ai/acre) plus 0.5 pint paraquat/acre (0.125 lb ai/acre)

Harvest: Dec. 11 by spindle picker

Immature boll count: Dec. 10

Test: 20

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Yuma Valley Experiment Station, old farm, fields B27 and B28

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 20

Treatment date: Sept. 5

Last irrigation: Aug. 13

Defoliation: None

Harvest: Nov. 7 by spindle picker

Immature boll count: Nov. 7 following picking

Tests: 21 and 22

Title: Areawide tests

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Cotton Research Center, Phoenix, field D-1 (test 21) and field H-3 (test 22)

Cultivars: DPL 16 (test 21) and Pima S-4 (test 22)

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 29

Treatment date: Aug. 26

Last irrigations: D-1, Aug. 27; H-3, Sept. 11

Defoliation: Oct. 10, PHYTAR 560, 1 gal/acre (2.48 ai/acre)

Harvest: Nov. 13 with spindle picker

Immature boll counts: Nov. 14, test 21; Nov. 18, test 22

Pink bollworm: Sampled 3 feet of one row of all replications of 3 treatments for pink bollworms in ground trash and plant material on Nov. 29

Additional information: Test 22 had poor early boll set and heavy late boll set

Test: 23

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Marana Experiment Station, field C-4

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 10

Treatment date: Aug. 29

Last irrigation: Sept. 3

Defoliation: Sept. 25, 2.5 gal sodium chlorate/acre (7.0 lb ai/acre)

Harvest: Nov. 18 by spindle picker

Immature boll count: Nov. 18 after picking

Additional information: On Aug. 29, plants showed severe water stress. On Sept. 20, the test was essentially defoliated by water stress and insect damage

Test: 24

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Safford Experiment Station, field F

Cultivar: Pima S-4

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 9

Treatment date: Aug. 29

Last irrigation: Sept. 4

Defoliation: Oct. 12, sodium chlorate at 2 gal/acre (5.6 lb ai/acre) plus paraquat at 0.5 pint/acre (0.125 lb ai/acre)

Harvest: Nov. 12 by spindle picker

Immature boll count: Nov. 12 after picking

Additional information: This field was actively flowering and setting fruit at time of treatment

Test: 25

Title: Preliminary test

Purpose: To evaluate new chemical termination treatments

Location: University of Arizona Cotton Research Center, Phoenix, field D-1

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 29

Treatment date: Aug. 27

Last irrigation: Aug. 27

Defoliation: Oct. 10, PHYTAR 560, 1 gal/acre (2.48 lb ai/acre)

Harvest: Nov. 13 with spindle picker

Immature boll count: Nov. 14

Additional information: Flowering and fruiting were at a low level in the fall

Test: 26

Title: 2,4-D plus chlorflurenol rates test

Purpose: To test several combinations of application rates of 2,4-D and chlorflurenol in mixture

Location: University of Arizona Cotton Research Center, Phoenix, field D-1

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 29

Treatment date: Aug. 26

Last irrigation: Aug. 27

Defoliation: Oct. 10, PHYTAR 560, 1 gal/acre (2.48 lb ai/acre)

Harvest: Nov. 13 by spindle picker

Immature boll count: Nov. 14

Test: 27

Title: TD-1123 in mixture with 0.5 lb ai/acre of chlorflurenol for chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field D-1

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 29

Treatment date: Aug. 26

Last irrigation: Aug. 27

Defoliations: Oct. 10, PHYTAR 560, 1 gal/acre (2.48 lb ai/acre)

Harvests: Sept. 30, Oct. 23, and Nov. 11, by hand

Immature boll counts: Sept. 30 and Oct. 23

Test: 28

Title: Treatment date test

Purpose: To estimate the proper time to apply 4 different chemical termination treatments to cotton

Location: University of Arizona Cotton Research Center, Phoenix, field H-3

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Split plot with 6 treatment dates as main plots and 5 treatments as subplots

Planting date: Mar. 29

Treatment dates: (see table 36)

Last irrigation: Sept. 11

Defoliation: Oct. 10, PHYTAR 560, 1 gal/acre (2.48 ai/acre)

Harvest: Nov. 13 with spindle picker

Immature boll count: Nov. 15

Additional information: This test had "cut out." Flowering and fruiting were at a low level at the time of treatment

1975 Tests

Test: 29

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: Marshburn Brothers Farm, Thermal, Calif.

Cultivar: DPL 61

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Treatment date: Sept. 4

Last irrigation: Sept. 4 (a cloudburst occurred in mid-September)

Defoliation: Oct. 5, 2 pints of DEF/acre (1.5 lb ai/acre)

Defoliation score: November 18, 2 people

Harvest: Nov. 18 with spindle picker

Immature boll count: Nov. 18 before picking

Additional information: This test was on the lower end of the field. It was obvious from plant growth that rows were not equally irrigated

Test: 30

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: Imperial Valley Conservation Research Center, Brawley, Calif.

Cultivar: DPL 61

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment date: Sept. 4

Last irrigation: Sept. 9

Defoliations: Nov. 3, 2 pints DEF/acre (1.5 lb ai/acre); Nov. 18, 2.5 gal Magchlor/acre (7.5 lb ai/acre)

Defoliation score: Nov. 18, 1 person

Harvests: Dec. 1 and Jan. 12 with spindle picker

Immature boll count: Dec. 1 after picking

Test: 31

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Yuma Valley Experiment Station, old farm, fields A-13 and A-14

Cultivar: DPL 61

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 26

Treatment date: Sept. 4

Last irrigation: Aug. 14

Defoliation: None

Defoliation score: Nov. 19

Harvest: Nov. 19 by spindle picker

Immature boll count: Nov. 19 before harvest

Additional information: Early termination of irrigation stopped most growth, flowering, and fruit set in the fall

Tests: 32, 33, and 34

Title: Areawide tests

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivars: DPL 61 (test 32), AZ 64 (test 33), and Pima S-4 (test 34)

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 14

Treatment dates: Aug. 26, treatments 2, 4, and 5; Sept. 10, treatment 3

Last irrigation: Sept. 4

Defoliation: Nov. 8, 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Defoliation score: Nov. 20 by 2 people

Harvests: Nov. 24, tests 32 and 33; Dec. 4, test 34, all with spindle picker

Immature boll counts: Nov. 24, test 32; Nov. 25, test 33; and Dec. 4, test 34. All counts were after picking

Test: 35

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Marana Experimental Station, field B-4

Cultivar: DPL 16

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Replant May 16

Treatment dates: Treatments 2, 4, and 5, Aug. 25; treatment 3, Sept. 8

Last irrigation: Sept. 2

Defoliation: Oct. 22, 2 gal sodium chlorate/acre (5.6 lb ai/acre) plus 1 pint Boll's Eye/acre (0.39 lb ai/acre)

Defoliation score: None. All plots near 100 percent defoliation on Dec. 5

Harvest: Dec. 5 by spindle picker

Immature boll count: Dec. 5 after picking

Test: 36

Title: Areawide test

Purpose: To test the most promising chemical termination treatments under diverse cultivar, environment, and farm management conditions

Location: University of Arizona Safford Experiment Station, field F

Cultivar: Pima S-4

Replications: 4

Plot size: 4 rows wide by 45 feet long

Experimental design: Randomized block

Planting date: Apr. 22

Treatment dates: Treatments 2, 4, and 5 on Aug. 25; treatment 3 on Sept. 8

Last irrigation: Aug. 30

Defoliation: Oct. 14, sodium chlorate at 2 gal/acre (5.6 lb/acre) plus paraquat at 0.5 pints/acre (0.125 lb ai/acre)

Freezes: 30° F, Oct. 24 and 25; 28° F, Nov. 12 and 15; 27° F, Nov. 18; and 24° F, Nov. 20

Defoliation score: None. Freeze killed before defoliation

Harvest: Nov. 21 by spindle picker

Immature boll count: Nov. 21 after picking

Test: 37

Title: Preliminary test

Purpose: To evaluate new chemical termination treatments on Upland and Pima cotton

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivars: AZ 64 and Pima S-4

Replications: AZ 64 - 2, Pima S-4 - 2

Plot size: 4 rows wide by 40 feet long

Experimental design: Two randomized blocks with 2 replications each

Planting date: Apr. 14

Treatment dates: Aug. 30, treatments 5 through 10; Sept. 12, treatments 2, 3, and 4

Last irrigation: Sept. 4

Defoliation: Nov. 8, 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Defoliation score: Nov. 20 by 2 people

Harvest: AZ 64, Nov. 24; S-4, Dec. 4 with spindle picker

Immature boll counts: AZ 64, Nov. 25; S-4, Dec. 4

Additional information: Both AZ 64 and Pima S-4 had peak boll set in late August

Test: 38

Title: 2,4-D, MCPA, and silvex rates

Purpose: To compare effectiveness of these 3 materials for chemical termination at different application rates

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 14

Treatment date: Aug. 26

Last irrigation: Sept. 4

Defoliation: Nov. 8, 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Defoliation score: Nov. 20 by 2 people

Harvest: Nov. 24 by spindle picker

Immature boll count: Nov. 25

Additional information: Boll set was varied in these plots, but generally late. Variable soil depth to gravel resulted in highly variable immature boll count and defoliation. Following laboratory cleaning and ginning, the lint samples were analyzed for trash and waste at Las Cruces using the Shirley Analyzer

Test: 39

Title: TD-1123 rates test

Purpose: To compare 4 rates of TD-1123 with 0.5 lb of chlorflurenol per acre for effectiveness of chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 14

Treatment date: Sept. 10

Last irrigation: Sept. 4

Defoliation: Nov. 8 with 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Defoliation score: None. All plots well defoliated

Harvest: Nov. 24 with spindle picker

Immature boll count: Nov. 25

Additional information: The test was at the upper end of the field and had very limited late flowering and fruiting

Test: 40

Title: Chlorflurenol and chlormequat rates

Purpose: To compare several rates of chlorflurnol and chlormequat, each in mixture with MCPA at 0.025 lb ai/acre, for chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Apr. 14

Treatment date: Aug. 29

Last irrigation: Sept. 4

Defoliation: Nov. 8 with 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Defoliation score: Nov. 20 by 2 people

Harvest: Nov. 24 by spindle picker

Immature boll count: Nov. 25

Additional information: Seed cotton samples were not saved and processed for this test. Peak fruiting occurred in late August

Test: 41

Title: TD-1123 stratified harvest

Purpose: To examine the effects of TD-1123 on fruiting, seed quality, and fiber quality at several harvest dates

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivar: AZ-64

Replication: 1

Plot size: 4 rows wide by 40 feet long

Experimental design: None

Planting date: Apr. 14

Treatment date: Sept. 11

Last irrigation: Sept. 4

Defoliation: Nov. 8 with 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Harvest: Weekly by hand beginning on Sept. 11

Test: 42

Title: Treatment date test

Purpose: To estimate the proper time to apply 5 different chemical termination treatments to cotton

Location: University of Arizona Cotton Research Center, Phoenix, field G-3

Cultivar: AZ-64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Split plot with 6 treatment dates as main plots and 6 treatments as subplots

Planting date: Apr. 14

Treatment dates: See table 52

Last irrigation: Sept. 4

Defoliation: Nov. 8 with 2 quarts of Boll's Eye/acre (1.55 lb ai/acre)

Defoliation score: Nov. 20 by 2 people

Harvest: Nov. 24 by spindle picker

Immature boll count: Nov. 25

Additional information: Peak boll set was in late August.

1976 Tests

Tests: 43, 44, and 45

Title: Uniform tests

Purpose: To test the most promising chemical termination treatments under diverse cultivars

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivars: DPL 61, test 43; AZ 64, test 44; and Pima S-5, test 45

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment dates: Aug. 30, treatments 4 and 5; Sept. 16, treatments 2 and 3

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Defoliation score: Oct. 27 by 2 people

Harvests: Nov. 3, all tests; Dec. 6, tests 44 and 45, all by spindle picker

Immature boll counts: Nov. 5, test 43 and 45; Nov. 8, test 44

Pink bollworm: Nov. 18 harvested 100 immature bolls per plot from selected treatments

Test: 46

Title: Preliminary test

Purpose: This test was designed to evaluate new chemical termination treatments on Upland and Pima cotton

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivar: AZ 64 and Pima S-5

Replications: AZ 64 - 2, S-5 - 2

Plot size: 4 rows wide by 40 feet long

Experimental designs: Two randomized blocks with 2 replications each

Planting date: Mar. 31

Treatment dates: Aug. 23, applied TD-1123 of treatment 8; the rest of treatment 8 was applied Sept. 2. Aug. 31, applied treatments 2, 3, and 6. Treatments 4, 5, and 9 were applied Sept. 1. Treatment 7 was applied Sept. 16

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Defoliation score: Oct. 27 by 2 people

Harvests: Nov. 3 and Dec. 6 by spindle picker

Immature boll counts: Nov. 5, S-5; Nov. 8, AZ 64.

Pink bollworm: Nov. 18, harvested 100 immature bolls per plot from selected treatments

Test: 47

Title: MCPA rates

Purpose: To evaluate MCPA in mixture with chlormequat at 3 rates for chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment date: Aug. 30

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Defoliation score: Oct. 27 by 2 people

Harvests: Nov. 3 and Dec. 6 by spindle picker

Immature boll count: Nov. 8

Test: 48

Title: TD-1123 rates

Purpose: To compare 4 rates of TD-1123 in mixture with chlorflurenol and with chlormequat for chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivar: DPL 61

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment date: Sept. 13

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Defoliation score: Oct. 19 by 2 people

Harvest: Nov. 3 by spindle picker

Immature boll count: Nov. 5

Additional information: Not enough late-maturing cotton in this test to justify a second pick when the rest of the field was second picked

Test: 49

Title: TD-1123 and BAS 08300 rates

Purpose: To evaluate TD-1123 and BAS 08300 in mixtures at several rates for chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment date: Sept. 15

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Defoliation score: Oct. 27 by 2 people

Harvests: Nov. 3 and Dec. 6 by spindle picker

Immature boll count: Nov. 8

Test: 50

Title: Chlorflurenol and chlormequat rates

Purpose: To test 5 rates each of chlorflurenol and chlormequat in mixture with TD-1123 for chemical termination

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment date: Sept. 17

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Defoliation score: Oct. 27 by 2 people

Harvests: Nov. 3 and Dec. 6 by spindle picker

Immature boll count: Nov. 8

Test: 51

Title: TD-1123 weekly harvest

Purpose: To examine the effects of TD-1123 on fruiting, seed quality, and fiber quality for several harvest dates

Location: University of Arizona Cotton Research Center, Phoenix, field C-2

Cultivar: AZ 64

Replications: 4

Plot size: 4 rows wide by 40 feet long

Experimental design: Randomized block

Planting date: Mar. 31

Treatment date: Sept. 14

Last irrigation: Sept. 8

Defoliation: Oct. 16, Boll's Eye at 2 quarts/acre (1.55 lb ai/acre)

Harvests: Weekly harvest of 1 row by handpicking beginning Sept. 7 and ending Nov. 2. Spindle picked 1 row on Nov. 3, and 2 rows on Dec. 6

Immature boll count: Nov. 2 on 1 row before spindle picking

APPENDIX TABLES FOLLOW

TABLE 1.--*Test 1: Effects of chemical termination treatments applied to Pima S-4 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*G/100 seed*	*Percent*	*Percent*
1. Check		858 a[1]	114,799 a	100	12.1	19.9	32.9
2. Chlorflurenol	1.5	781 a	73,961 c	73	12.4	17.1	32.7
3. 2,4-D + chlormequat	.033 + 0.75	825 a	635 e	5	12.1	16.1	33.0
4. 2,4-D	.033	744 ab	23,777 d	34	12.2	18.3	34.2
5. Chlormequat	.75	764 ab	20,555 d	29	12.2	21.1	33.7
6. DPX 1840	1.0	863 a	101,322 ab	87	12.4	20.3	32.4
7. Chlorflurenol	.025	812 a	87,574 bc	81	12.2	23.7	32.8
8. TD-1123	2.0	581 b	27,633 d	56	12.4	20.7	32.3
CV (percent)[2]		14	21	--	2	17	3

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 2.--*Test 1: Effects of chemical termination treatments (241) at Cotton Research Center, Phoenix, Ariz., on*

Julian date	Check		Chlorflurenol 1.5		2,4-D + chlormequat		2,4-D	
	Flowers	Bolls	Flowers	Bolls	Flowers	Bolls	Flowers	Bolls
							No./160 ft of row	
223							86	5
5							92	6
7							91	7
9							42	3
230							57	17
4							23	7
6							27	8
8							9	5
241	1	1	9	0	4	1	11	1
3	5	3	11	4	8	0	12	1
5	8	3	15	5	11	0	13	2
9	19	14	25	17	21	1	24	5
250	35	29	26	16	32	0	38	14
2	20	13	24	13	18	1	23	7
5	19	14	31	19	22	2	16	2
7	17	12	13	3	6	0	7	0
9	6	3	8	4	5	0	1	0
262	7	3	2	0	4	0	1	1
4	10	4	1	0	2	0	0	0
6	7	4	1	0	0	0	0	0
9	4	2	0	0	0	0	0	0
271	3	3	1	0	0	0	0	0
3	9	5	1	0	0	0	1	0
6	9	3	0	0	0	0	1	0
280	6	3	0	0	0	0	0	0
4	8	5	1	0	0	0	3	1
7	5	4	1	0	0	0	1	1
290	1	0	0	0	0	0	2	0
4	4	0	1	0	3	0	3	0
8	1	0	0	0	0	0	3	0
301	0	0	1	1	0	0	4	1
4	1	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0

[1]See table 1 for treatment rates.

August 28, 1972, at Cotton Research Center, Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Emergence		Time to emerge		Fiber length		Fiber uniformity	Fiber strength	Micronaire
		Greenhouse	Field	Greenhouse	Field	2.5-percent span	50-percent span			
Percent	*Percent*	*Percent*	*Percent*	*Days*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
35.9 bc	8.3 b	86 a	70 a	6.0 ab	10.9	1.36	0.71 ab	52 a	29.2	3.73
35.9 bc	8.9 ab	91 a	70 a	6.2 ab	11.2	1.37	.69 d	50 c	28.5	3.72
36.7 abc	10.2 a	67 b	47 b	7.2 c	11.7	1.36	.69 bcd	51 bc	28.3	3.77
38.1 a	10.1 a	62 b	45 b	6.6 bc	11.7	1.37	.69 cd	50 bc	28.9	3.67
36.9 ab	8.8 b	84 a	74 a	6.2 ab	10.6	1.35	.69 cd	51 abc	29.1	3.70
35.6 bc	9.1 ab	90 a	72 a	5.6 a	11.2	1.37	.72 a	52 a	29.0	3.62
36.0 bc	8.8 b	88 a	68 a	5.8 ab	11.0	1.37	.71 abc	52 ab	29.1	3.70
35.3 c	8.5 b	85 a	72 a	5.7 ab	10.9	1.37	.69 cd	51 bc	28.7	3.52
3	8	10	13	7	6	1	2	2	2	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

applied to Pima S-4 cotton on August 28, 1972, flowering and boll set per 160 feet of row[1]

Chlormequat		DPX 1840		Chlorflurenol 0.025		TD-1123	
Flowers	Bolls	Flowers	Bolls	Flowers	Bolls	Flowers	Bolls
6	1	9	3	6	0	11	0
9	1	8	5	7	2	13	0
18	4	16	11	13	13	9	0
24	2	29	17	28	16	11	1
24	3	22	15	43	30	19	2
17	0	27	17	21	15	15	4
12	1	23	15	26	15	12	1
14	1	10	4	17	9	2	1
4	0	7	5	13	4	2	0
6	0	5	1	15	3	0	0
8	0	0	0	5	1	0	0
5	0	1	1	4	0	1	0
1	0	0	0	1	0	2	0
2	0	1	0	7	3	2	0
2	0	4	1	2	0	4	1
2	1	6	4	2	2	5	1
2	0	7	4	4	1	13	3
3	0	4	3	7	4	14	4
1	1	3	2	5	1	9	3
1	0	3	0	4	0	26	2
8	0	3	2	8	1	37	0
1	0	2	0	1	1	20	0
1	0	3	0	2	0	18	0
1	0	1	1	0	0	28	0
2	0	0	0	1	0	2	0

TABLE 3.--*Test 2: Effects of chemical termination treatments applied to DPL 16 cotton on August 28, 1972,*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*G/100*	*Percent*	*Percent*
1. Check		1541 a[1]	112,212 a	100	10.0	23.4	34.8 a
2. Chlorflurenol	1.5	1188 b	16,834 c	38	10.0	18.0	33.5 c
3. 2,4-D + chlormequat	.033 + 0.75	1214 b	6,398 c	27	10.1	18.8	33.4 c
4. 2,4-D	.033	1231 b	14,611 c	33	10.2	18.1	33.4 c
5. Chlormequat	.75	1528 a	68,471 b	62	10.2	17.1	34.5 ab
6. DPX 1840	1.0	1611 a	83,354 b	69	9.9	19.3	35.0 a
7. Chlorflurenol	.025	1463 a	71,693 b	69	10.1	16.7	34.4 ab
8. TD-1123	2.0	1085 b	54,677 b	79	10.0	18.8	33.9 bc
CV (percent)[2]		7	34	--	2	20	1

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 4.--*Test 2: Effects of chemical termination treatments applied to DPL 16 cotton on August 28, 1972,*

feet of row[1]

Julian date	Check		Chlorflurenol 1.5		2,4-D + chlormequat		2,4-D	
	Flowers	Bolls	Flowers	Bolls	Flowers	Bolls	Flowers	Bolls
	No./160 ft of row							
234							7	1
6							15	
8							8	
241	40	23	34	5	24	4	17	3
3	55	33	39	7	33	5	30	3
5	50	32	37	6	48	2	37	3
9	58	23	22	3	41	2	23	4
250	48	23	15	8	26	5	20	4
2	44	14	25	5	25	1	25	5
5	27	9	13	8	12	2	6	2
7	35	7	15	5	7	2	3	1
9	31	13	7	1	3	1	3	1
262	23	8	10	0	1	0	1	0
4	25	2	2	0	1	0	0	0
6	10	3	5	1	0	0	0	0
9	12	1	1	0	0	0	1	0
271	14	6	2	0	0	0	0	0
3	17	2	0	0	0	0	0	0
6	10	3	1	0	0	0	2	0
280	6	5	1	0	2	0	1	0
4	4	4	0	0	3	0	0	0
7	9	4	1	0	5	0	0	0
290	10	3	0	0	10	1	6	0
4	20	0	1	0	18	0	9	0
8	4	0	0	0	5	0	0	0
301	9	1	0	0	6	0	4	0
4	2	0	0	0	2	0	2	0
6	2	0	0	0	1	0	0	0

[1]See table 3 for treatment rates.

at the Cotton Research Center, Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Emergence		Time to emerge		Fiber length		Fiber uniformity	Fiber strength	Micronaire
		Greenhouse	Field	Greenhouse	Field	2.5-percent span	50-percent span			
Percent	*Percent*	*Percent*	*Percent*	*Days*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
37.6	7.4 c	91 a	62 a	4.7 abc	11.9	1.13	0.56	50	18.9	4.55
36.9	9.2 b	93 a	47 abc	4.7 abc	12.9	1.11	.55	49	18.9	4.65
37.5	10.9 a	76 b	39 bc	5.0 cd	13.0	1.12	.56	50	18.8	4.67
37.6	11.2 a	77 b	36 c	5.4 d	12.4	1.12	.55	49	18.8	4.55
37.3	7.6 c	87 a	58 a	4.9 bc	12.9	1.12	.56	50	18.9	4.64
37.8	7.4 c	91 a	62 a	4.6 ab	12.6	1.12	.56	50	19.0	4.59
37.2	7.5 c	92 a	62 a	4.6 abc	12.1	1.12	.56	50	19.2	4.61
37.3	8.9 b	90 a	53 ab	4.5 a	11.6	1.12	.55	49	18.5	4.72
1	6	5	18	3	7	2	4	3	2	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

(241) at the Cotton Research Center, Phoenix, Ariz., on flowering and boll set per 160

Chlormequat		DPX 1840		Chlorflurenol 0.025		TD-1123	
Flowers	Bolls	Flowers	Bolls	Flowers	Bolls	Flowers	Bolls
24	12	21	6	39	16	35	0
44	23	38	20	49	26	59	2
43	17	47	21	45	23	46	1
37	7	33	10	46	19	34	3
34	20	13	5	41	18	25	3
33	11	28	7	28	12	20	3
32	14	19	6	26	8	16	0
16	5	15	4	23	8	10	1
24	7	20	8	29	6	11	0
15	5	18	8	19	3	24	2
8	4	11	4	9	2	8	0
21	3	10	3	20	3	7	1
6	1	14	4	10	1	10	3
10	2	7	2	3	0	17	3
7	2	15	3	5	0	27	4
2	2	11	3	6	2	30	5
9	1	7	3	5	3	44	20
11	7	9	2	2	2	47	20
7	1	8	6	5	2	47	8
11	1	8	1	3	1	55	3
17	0	13	0	3	0	89	0
4	0	4	0	1	1	32	0
15	1	14	0	5	0	40	1
5	0	0	0	0	0	13	0
1	0	0	0	0	0	5	0

TABLE 5.--*Tests 1 and 2: Cotton seedling emergence in 14 days and average number of days to emerge per 100 seed in sand in the greenhouse. Seed from plants treated with 2,4-D at 0.33 lb ai/acre and harvested as bolls matured*

Days from 2,4-D treatment to boll maturity	Total emergence			Time to emerge		
	Untreated[1] check	2,4-D treated		Untreated[1] check	2,4-D treated	
		Pima S-4	DPL 16		Pima S-4	DPL 16
	Percent emerged			*Average days to emerge*		
0	93			4.3		
2		88 ab[2]	89 ab		4.7 i	4.9 jk
4		88 a-c	88 ab		4.7 i	4.6 k
8		88 a-c	93 a		4.7 i	4.9 jk
11		94 a	95 a		4.7 i	5.7 i-k
14	90	82 a-d	89 ab	4.4	5.0 hi	6.1 h-k
16		85 a-c	70 a-c		5.2 hi	6.3 g-k
18		83 a-d	71 a-c		5.3 hi	8.6 e-i
21	85	69 a-e	40 c-f	4.2	5.9 f-i	8.5 e-i
23		72 a-e	46 c-e		5.5 g-i	10.2 b-f
25	79	62 b-f	6 ef	5.0	7.0 d-h	13.3 ab
28	95	62 b-f	35 c-f	4.5	7.1 d-h	11.5 a-e
30	88	47 ef	18 d-f	5.0	8.5 b-d	10.7 a-f
32	91	42 e-g	46 c-e	5.0	8.4 b-d	10.2 b-f
35	94	42 e-g	31 c-f	5.0	8.1 b-e	11.8 a-e
39		46 ef	49 b-d		9.9 ab	9.5 c-g
43	93	57 c-f	31 c-f	4.7	7.5 c-g	9.0 d-h
46	93	36 fg	21 d-f	4.8	8.1 b-e	9.4 c-h
49	94	35 fg	28 d-f	4.3	7.0 d-h	11.3 a-f
53		3 h	3 f		11.0 a	12.7 a-c
57	84	35 fg	40 c-f	4.5	7.8 b-f	11.2 a-f
60		53 d-f	4 f		9.5 a-c	13.0 ab
63	98	49 ef	0 f	4.6	8.5 b-d	
65		46 ef	4 f		7.9 b-f	8.0 f-j
70	96	13 gh	20 d-f	4.3	6.4 d-i	13.8 a
79	79	70 a-e	15 d-f	4.7	6.0 e-i	12.0 a-d
CV (percent)[3]	7	28	51	9	16	18

[1]The untreated check was from an unreported test on Pima S-4 immediately adjacent to tests 1 and 2.

[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not significantly different at the 5-percent level by the F test.

[3]CV = coefficient of variation.

TABLE 6.--*Tests 1 and 2: Severity of 2,4-D symptoms on true leaves of seedlings of Pima S-4 and DPL 16 cotton harvested periodically after 2,4-D treatment at 0.033 lb ai/acre*

Days from 2,4-D treatment to boll maturity	Ratings[1]	
	S-4	DPL 16
2	0	0
4	0	0
8	0	0
11	0	0
14	.3	.3
16	1.0	0
18	1.0	.3
21	1.0	.7
23	1.0	1.5
25	2.7	2.0
28	2.0	1.7
30	2.3	1.7
32	2.7	2.3
35	2.0	1.7
39	2.5	1.7
43	2.7	1.7
46	2.5	2.3
49	2.0	2.7
53	---	3.0
57	2.7	2.7
60	2.8	3.0
63	2.3	---
65	1.3	3.0
70	2.0	3.0
79	2.8	3.0

[1]Severity of 2,4-D symptoms on true leaves of seedlings from 2,4-D treated plots: 0 = none, 1 = mild, 2 = moderate, 3 = severe.

TABLE 7.--*Test 3: Effects of chemical termination treatments applied to Pima S-4 cotton on August 29, 1972*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*G/100*	*Percent*	*Percent*
1. Check		805[1]	87,982 a	100	12.2	20.9	33.4
2. 2,4-D	0.025	711	24,140 c	39	12.1	22.7	35.1
3. 2,4-D + chlormequat	.025 + 0.5	782	1,452 d	5	12.0	19.6	34.1
4. 2,4-D + DPX 1840	.033 + 1.0	673	19,829 cd	39	12.2	22.0	33.8
5. Chlormequat + DPX 1840	.75 + 1.0	546	17,560 cd	52	12.4	19.0	33.3
6. TD-1123	1.0	544	62,164 b	103	11.9	18.0	34.2
7. Chlorflurenol	.0167	819	77,500 ab	86	12.3	17.3	33.4
8. 2,4-D	.033	739	18,150 cd	29	12.2	18.1	33.4
9. Chlorflurenol	.5	758	57,127 b	71	11.7	17.7	34.5
CV (percent)[2]		18	32	--	3	17	4

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 8.--*Test 4: Effects of chemical termination treatments applied to DPL 16 cotton on August 29, 1972,*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*G/100*	*Percent*	*Percent*
1. Check		1,467 a[1]	65,612 a	100	10.3 ab	16.0	34.6 a
2. 2,4-D	0.025	1,296 bc	27,815 b	54	10.3 ab	16.1	33.7 ab
3. 2,4-D + chlormequat	.025 + 0.5	1,224 bc	7,759 b	29	10.4 a	21.2	33.2 b
4. 2,4-D + DPX 1840	.033 + 1.0	1,167 c	9,211 b	34	10.2 ab	18.7	33.7 ab
5. Chlormequat + DPX 1840	.75 + 1.0	1,352 ab	47,462 a	80	9.9 c	18.1	34.3 a
6. TD-1123	1.0	1,198 bc	48,052 a	91	10.0 bc	20.0	34.3 a
7. Chlorflurenol	.0167	1,471 a	50,593 a	77	10.2 abc	17.5	34.4 a
8. 2,4-D	.033	1,319 abc	17,152 b	36	10.2 ab	16.5	33.7 ab
9. Chlorflurenol	.5	1,308 bc	27,679 b	53	10.2 abc	16.6	34.0 ab
CV (percent)[2]		7	39	--	2	17	2

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

at the Cotton Research Center, Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Emergence		Time to emerge		Fiber length		Fiber uniformity	Fiber strength	Micronaire
		Greenhouse	Field	Greenhouse	Field	2.5-percent span	50-percent span			
Percent	*Percent*	*Percent*	*Percent*	*Days*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
36.4	8.1 c	91 a	81 a	5.2 a	10.9	1.36	0.70	52	29.2	3.75
38.9	9.7 ab	67 bc	55 c	6.9 d	11.6	1.37	.70	51	29.1	3.76
37.9	10.0 a	64 c	46 d	6.9 d	11.0	1.35	.69	51	28.5	3.67
37.5	9.6 ab	66 bc	79 a	6.2 c	11.6	1.36	.70	52	29.0	3.64
36.4	8.6 c	88 a	80 a	5.4 ab	10.7	1.37	.72	53	28.9	3.78
37.3	8.4 c	76 b	66 b	5.8 bc	11.3	1.34	.68	50	29.9	3.64
36.5	8.4 c	89 a	46 d	5.2 ab	11.7	1.37	.72	52	28.4	3.79
37.2	10.0 a	51 d	50 cd	6.4 cd	11.6	1.37	.69	50	29.2	3.73
37.9	8.9 bc	89 a	74 ab	5.5 ab	10.7	1.33	.67	50	29.4	3.75
4	6	9	9	5	5	1	4	3	2	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

at the Cotton Research Center, Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Emergence		Time to emerge		Fiber length		Fiber uniformity	Fiber strength	Micronaire
		Greenhouse	Field	Greenhouse	Field	2.5-percent span	50-percent span			
Percent	*Percent*	*Percent*	*Percent*	*Days*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
37.4	7.4 d	89 ab	68 a	4.1 abc	11.5	1.15	0.58 a	51 a	18.7 abc	4.55 b
37.4	9.8 ab	75 cd	50 bc	4.7 c	12.0	1.14	.57 ab	50 ab	18.4 bc	4.64 ab
37.4	11.2 a	83 bc	39 c	4.4 abc	11.7	1.14	.58 a	50 ab	19.1 ab	4.46 b
37.7	10.7 a	85 abc	50 bc	4.5 bc	11.6	1.14	.57 ab	50 ab	19.0 ab	4.51 b
36.9	7.0 d	91 ab	61 ab	4.3 abc	11.1	1.12	.55 bc	49 bc	19.1 a	4.60 ab
37.6	8.7 bcd	95 a	58 ab	3.9 a	11.9	1.12	.54 c	48 c	18.7 abc	4.74 a
37.2	7.5 d	92 ab	61 ab	4.1 ab	11.2	1.14	.57 ab	50 ab	18.7 abc	4.47 b
37.3	9.7 abc	71 d	52 bc	4.3 abc	12.1	1.14	.57 ab	50 ab	18.8 ab	4.65 ab
36.9	7.9 cd	93 ab	63 ab	3.9 a	12.2	1.14	.56 ab	50 ab	18.2 c	4.62 ab
1	13	7	17	4	7	1	2	1	2	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 9.--*Test 5: Effects of chemical termination treatments applied to DPL 16 cotton August 22, 1972,*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Lint	Emergence	
								Greenhouse	Field
	Lb/ai acre	Lb/acre	No./acre		G/100 seed	Percent	Percent	Percent	Percent
1. Check		1,110[1]	29,076 a	100	9.3	24.3	35.4 ab	96 a	89 a
2. 2,4-D	0.033	1,138	607 b	-1	9.6	21.7	35.7 ab	91 a	77 abc
3. Chlormequat	.75	1,055	7,841 b	32	9.5	26.3	34.2 c	97 a	82 ab
4. 2,4-D + chlormequat	.033 + .75	1,064	327 b	5	9.5	24.2	34.8 bc	80 b	68 c
5. Chlorflurenol	1.0	1,111	47 b	0	9.4	22.5	35.9 a	94 a	75 bc
6. Immature bolls hand-picked		1,073	0 b	3	--	--	35.3 ab	--	--
CV (percent)[2]		12	96	--	2	17	2	5	10

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 10.--*Test 6: Effects of chemical termination treatments applied to Pima S-4 cotton on August 24, 1972, at Marana, Ariz., on immature boll production and pink bollworm population*

Treatment	Application rate	Immature bolls	Pink bollworm	
			Fall	Spring
	Lb ai/acre	*No./acre*	*No./acre*	*No./acre*
1. Check		26,538 a[1]	74,488 a	26,800 a
2. 2,4-D	0.033	7,600 bc	28,096 b	20,200 ab
3. Chlormequat	.75	3,699 bc	13,852 b	21,000 ab
4. 2,4-D + chlormequat	.033 + 0.75	281 c	4,835 b	15,800 b
5. Chlorflurenol	1.5	10,615 b	20,778 b	15,700 b
CV (percent)[2]		72	99	25

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, according to Duncan's multiple range test.
[2]CV = coefficient of variation.

at Mesa, Ariz., on lint yield, immature bolls, seed, fiber, and pink bollworm emergence

Time to emerge		Seedlings with 2,4-D symptoms		Fiber length		Fiber uniformity	Fiber strength	Micronaire	Spring emergence of moths
Greenhouse	Field	Greenhouse	Field	2.5-percent span	50-percent span				
Days	*Days*	*No./100 seed*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1		*No./acre*
5.8	10.8	0	0	1.13	0.57 a	51 a	19.7	4.25	2,500
6.5	11.7	7	0	1.12	.58 a	51 a	19.7	4.30	250
6.2	11.1	0	0	1.13	.56 ab	50 ab	19.7	4.12	750
7.1	11.3	11	0	1.10	.53 c	48 b	19.3	4.26	250
6.2	11.2	0	0	1.10	.54 bc	49 b	19.1	4.21	1,250
--	--	--	--	1.11	.55 abc	50 ab	19.1	4.35	1,500
11	6	--	--	2	3	2	3	2	122

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 11.--*Test 7: Effects of chemical termination treatments applied to Pima S-4 cotton*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout	Lint	Trash
	Lb ai/ acre	*Lb/acre*	*No./acre*		*G/100 seed*	*Percent*	*Percent*	*Percent*	*Percent*
1. Check		570[1]	35,061 a	100	11.8	17.9	35.0 ab	37.0 b	5.3 b
2. 2,4-D	0.017	541	23,189 b	74	11.6	17.9	35.5 a	37.4 ab	5.1 b
3. Chlormequat	.75	581	25,274 b	72	11.9	20.6	35.2 ab	37.1 b	5.1 b
4. 2,4-D + chlormequat	.033 + .75	506	13,680 c	46	11.6	16.3	35.8 a	38.0 a	5.8 b
5. Chlorflurenol	1.5	543	22,911 b	74	11.8	20.8	34.3 b	37.1 b	7.5 a
CV (percent)[2]		7	28	--	3	22	2	1	21

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 12.--*Mean of yield, immature bolls, and seed and fiber quality response to selected*

Treatment	Number of comparisons	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout	Lint
		Percent of check	*Percent of check*	*Percent of check*	*G/100 seed*	*Percent*	*Percent*	*Percent*
1. 2,4-D	8	90.0 (2)[1]	22.6 (8)	31	+0.05	-1.6	+0.1 (1)	+0.8
2. Chlormequat	4	95.3	30.0 (4)	41	+ .15	- .1	- .2 (1)	- .1 (1)
3. Chlorflurenol	6	90.4 (2)	37.7 (6)	47	- .03	-1.6	- .2 (2)	+ .2
4. 2,4-D + chlormequat	6	90.7 (2)	3.8 (6)	14	0	-1.0	- .3 (3)	+ .5 (1)
5. DPX 1840	2	102.5	81.0 (1)	78	+ .10	-1.8	- .2	0
6. TD-1123	4	71.8 (3)	54.3 (3)	82	- .08	- .7	- .3 (1)	0
7. 2,4-D + DPX 1840	2	81.7 (1)	18.5 (2)	37	- .05	+1.9	- .3	+ .7
8. Chlormequat + DPX 1840	2	80.0	46.0 (1)	66	- .10 (1)	+ .1	- .2	- .3

[1]Number of comparisons (in parentheses) that differ significantly from the check at the 5-percent

on August 25, 1972, at Safford, Ariz., on lint yield, immature bolls, seed, and fiber

Emergence		Time to emerge		Seedlings with 2,4-D symptoms		Fiber length				
Green-house	Field	Green-house	Field	Green-house	Field	2.5-percent span	50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Days*	*Days*	*No./100*	*No./100*	*Inches*	*Inch*	*Percent*	T_1	
96 a	86 a	6.0 a	10.7 b	0	0	1.41	0.71	50	28.7	3.25
95 a	88 a	5.8 a	10.3 b	7	0	1.40	.72	51	28.3	3.25
96 a	88 a	5.9 a	10.3 b	0	0	1.40	.69	49	28.6	3.23
55 b	46 b	8.8 b	13.3 a	53	2	1.38	.70	50	28.8	3.51
95 a	82 a	5.5 a	10.0 b	0	0	1.38	.69	50	28.5	3.34
5	8	5	7	--	--	2	4	2	2	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

chemical termination treatments in 1972 tests expressed as deviation from the check

Trash	Emergence		Time to emerge		Fiber length		Fiber uniformity	Fiber strength	Micronaire
	Green-house	Field	Green-house	Field	2.5-percent span	50-percent span			
Percent	*Percent*	*Percent*	*No. days*	*No. days*	*Inches*	*Inch*	*Percent*	T_1	
+1.9 (6)	-15 (6)	-18 (6)	+0.6 (4)	+0.5	-0.003	-0.009 (1)	-0.7 (1)	-0.1	+0.02
+ .4	- 1	- 1	+ .2	+ .1	- .008	- .013 (1)	- .9	- .05	- .02
+1.2 (2)	+ 1	- 7 (1)	0	+ .3	- .018	- .024 (2)	-1.3 (2)	- .3	- .04
+2.3 (4)	-21 (5)	-29 (6)	+1.3 (3)	+ .9 (1)	- .011	- .015 (1)	- .9 (2)	- .3	+ .04
+ .3	+ 2	+ 1	- .3	+ .2	0	+ .005	0	- .05	- .03
+ .7 (1)	- 3 (1)	- 8 (1)	0 (1)	+ .1	- .013	- .023 (2)	-1.4 (2)	- .05	+ .01 (1)
+2.4 (2)	-15 (1)	-10 (1)	+ .7 (1)	+ .4	- .005	- .005	- .5	+ .05	- .07
0	0	- 4	+ .2	-0.3	- .020	- .005 (1)	- .5 (1)	+ .05	+ .01

confidence level. Also see previous tables 1, 3, 7, 8, 9, 10, and 11.

TABLE 13.--*Test 8: Effects of chemical termination of DPL 16 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*
1. Check		1,197 a[1]	84,000 a	100	32.5 a	35.3
2. 2,4-D	0.033	1,001 b	3,600 b	21	32.5 a	35.5
3. Chlorflurenol	1.0	1,172 a	1,600 b	4	31.9 b	34.7
4. 2,4-D + chlormequat	.025 + 0.5	972 b	900 b	20	31.9 b	34.7
5. 2,4-D + chlorflurenol	.025 + 0.5	980 b	200 b	18	31.1 c	34.7
CV (percent)[2]		10	51	--	1	2

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent not significantly different at the 5-percent level by the F test.
[2]CV = Coefficient of variation.

TABLE 14.--*Test 9: Lint yield, immature bolls at first harvest, and certain indices of seed and*

Treatment	Application rate	Lint yield			Immature bolls	DE index
		1st pick	2d pick	Total		
	Lb ai/acre	*Lb/acre*	*Lb/acre*	*Lb/acre*	*No./acre*	
1. Check		1,209 a[1]	184 a	1,393 a	92,946 a	100
2. 2,4-D	0.033	890 c	29 b	919 c	1,674 b	36
3. Chlorflurenol	1.0	1,041 b	29 b	1,070 b	4,492 b	28
4. 2,4-D + chlormequat	.025 + 0.5	968 bc	20 b	988 bc	41 b	29
5. 2,4-D + chlorflurenol	.025 + 0.5	1,005 bc	20 b	1,025 bc	653 b	27
CV (percent)[2]		8	75	7	52	--

TABLE 14.--Continued

Treatment	Application rate	Floaters		Germination		Fiber length (2.5 percent)	
		1st pick	2d pick	1st pick	2d pick	1st pick	2d pick
	Lb ai/acre	*Percent*	*Percent*	*Percent*	*Percent*	*Inches*	*Inches*
1. Check		7.5 bc	17.6	92	86	1.12	1.15
2. 2,4-D	0.033 + 0.5	6.6 c	17.7	92	93	1.11	1.12
3. Chlorflurenol	1.0	8.6 ab	17.2	97	90	1.11	1.13
4. 2,4-D + chlormequat	.025 + 0.5	10.3 a	14.2	87	95	1.13	1.11
5. 2,4-D + chlorflurenol	.025 + 0.5	8.9 ab	17.0	92	90	1.12	1.09
CV (percent)[2]		8	19	6	6	1	2

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

August 22, 1973, at Brawley, Calif. on lint, immature bolls, seed, and fiber

Trash	Seed weight	Floaters	Germination	Fiber length 2.5-percent span	Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*G/100 seed*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
7.9	10.4	6.7	95	1.15	0.57	50	22.0	4.36
8.6	9.5	5.6	93	1.15	.58	51	21.8	4.46
8.2	9.8	4.9	96	1.13	.54	48	21.2	4.53
8.0	9.6	5.6	95	1.13	.55	49	21.0	4.33
10.3	9.9	5.4	95	1.15	.57	49	21.3	4.40
15	4	16	2	2	3	2	2	2

level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are

fiber quality of DPL cotton treated with chemical termination on August 22, 1973, at Yuma, Ariz.

Gin turnout		Lint		Trash		Seed weight	
1st pick	2d pick	1st pick	2d pick	1st pick	2d pick	1st pick	2d pick
Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*G/100 seed*	*G/100 seed*
33.0	34.4 a	38.9	37.1 bc	15.2	7.1 b	9.5	9.7
33.1	32.5 ab	39.9	40.4 a	16.9	17.8 a	9.6	10.6
33.2	30.2 bc	39.7	37.0 bc	16.2	18.4 a	9.5	9.6
32.7	30.4 bc	39.6	38.1 ab	17.4	20.1 a	9.4	9.6
33.5	28.6 c	40.1	34.2 c	16.6	16.3 a	9.4	9.6
3	7	3	5	6	27	2	4

Fiber length (50 percent)		Fiber uniformity		Fiber strength		Micronaire	
1st pick	2d pick	1st pick	2d pick	1st pick	2d pick	1st pick	2d pick
Inch	*Inch*	*Percent*	*Percent*	T_1	T_1		
0.56	0.54	50	47	21.7	19.4	4.33	3.47
.55	.55	50	49	20.8	19.5	4.66	4.42
.54	.53	49	47	20.7	19.6	4.47	3.85
.56	.53	49	48	20.6	18.8	4.29	4.27
.55	.51	49	46	20.8	19.7	4.51	3.80
2	6	1	5	2	3	3	8

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 15.--*Test 10: Lint yield, immature bolls at harvest, and certain indices of seed and fiber*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*
1. Check		1,375 a[1]	12,342 a	100	35.6 a	39.9 b
2. 2,4-D	0.033	1,221 b	318 b	14	34.4 b	40.6 a
3. Chlorflurenol	1.0	1,261 b	3,812 b	38	35.6 a	40.4 a
4. 2,4-D + chlormequat	.025 + 0.5	1,212 b	91 b	13	34.2 b	39.9 b
5. 2,4-D + chlorflurenol	.025 + 0.5	1,212 b	363 b	15	34.5 b	41.1 a
CV (percent)[2]		5	86	--	1	1

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent not significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 16.--*Test 11. Lint yield, immature bolls at harvest, and certain indices of seed and fiber*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*
1. Check		817[1]	52,817 a	100	29.9	35.2
2. 2,4-D	0.033	853	6,353 b	8	30.3	35.6
3. Chlorflurenol	1.0	731	34,757 a	76	30.2	35.1
4. 2,4-D + chlormequat	.025 + 0.5	817	454 b	1	30.4	35.5
5. 2,4-D + chlorflurenol	.025 + 0.5	844	4,674 b	5	29.5	35.2
CV (percent)[2]		15	85	--	2	3

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent not significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

quality of DPL 16 cotton treated with chemical termination on August 27, 1973, at Phoenix, Ariz.

Trash	Seed weight	Floaters	Germination	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*G/100 seed*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
10.5 b	9.8	8.9	91	1.15	0.57	50	20.1	4.61
15.3 a	9.6	6.4	99	1.15	.57	50	21.8	4.64
11.9 b	10.0	6.9	99	1.15	.57	49	20.4	4.56
14.0 a	9.8	7.4	96	1.18	.62	52	20.6	4.53
16.0 a	9.5	5.3	91	1.17	.59	51	21.4	4.58
11	1	26	3	1	3	2	4	2

level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are

quality of Pima S-4 cotton treated with chemical termination on August 27, 1973, at Phoenix, Ariz.

Trash	Seed weight	Floaters	Germination	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*G/100 seed*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
15.0	12.2	13.4	98	1.41	0.73	52 ab	32.0	3.52
14.8	12.7	12.4	97	1.40	.71	51 c	31.2	3.58
14.5	12.2	13.2	97	1.39	.71	51 bc	30.5	3.59
14.3	12.0	11.9	94	1.42	.74	52 a	30.7	3.76
16.3	12.1	9.4	92	1.40	.73	52 a	32.0	3.59
14	2	19	4	1	1	1	2	3

level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are

TABLE 17.--*Test 12: Lint yield, immature bolls at harvest, and certain indices of seed and fiber*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*
1. Check		937[1]	138,453 a	100	35.0	38.3
2. 2,4-D	0.033	1,021	16,864 b	3	35.4	38.4
3. Chlorflurenol	1.0	1,010	104,510 a	68	36.1	38.7
4. 2,4-D + chlormequat	.025 + 0.5	943	10,668 b	7	35.9	38.9
5. 2,4-D + chlorflurenol	.025 + 0.5	934	16,594 b	12	35.5	38.3
CV (percent)[2]		15	32	--	3	2

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent not significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 18.--*Residue of chlorflurenol and 2,4-D in cotton seed and cotton seed products from the 1973 chemical termination test on Pima S-4 cotton at Marana, Ariz.*

Cotton seed fraction	Chlorflurenol[1] 1.0 lb ai/acre	Combined treatment: Chlorflurenol[1] 0.5 lb ai/acre	Combined treatment: 2,4-D 0.025 lb ai/acre
	Parts per million of residue		
Whole seed	0	0.028	0
Hulls	.009	.006	0
Cotton seed meal	.041	.025	0
Crude oil	.12	.052	0
Refined oil	0	0	0
Bleached refined oil	0	0	0
Soap stock	([2])	([2])	([2])

[1]Data courtesy EM Laboratories, Inc.; tests performed by Department of Analytical Services, Texas A&M University, 1974.
[2]Analyses for chlorflurenol and 2,4-D could not be satisfactorily made in this fraction.

quality of Pima S-4 cotton treated with chemical termination on August 31, 1973, at Marana, Ariz.

Trash	Seed weight	Floaters	Germination	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*G/100 seed*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
8.4	12.6	9.7	97	1.40	0.73	51	30.5	3.73
7.7	12.0	10.8	95	1.39	.72	52	30.1	3.71
6.8	11.8	12.4	99	1.40	.73	52	30.6	3.60
7.7	12.2	11.8	96	1.40	.73	52	30.4	3.72
7.5	11.9	8.7	94	1.40	.73	52	30.6	3.72
15	3	29	3	1	5	3	3	3

level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are

TABLE 19.--*Test 13: Lint yield, immature bolls at harvest, and certain indices of seed and fiber*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*
1. Check		751[1]	203,897 a	100	35.3	38.0 b
2. 2,4-D	0.033	768	84,761 b	39	36.3	39.0 a
3. Chlorflurenol	1.0	813	100,769 b	41	35.1	37.8 b
4. 2,4-D + chlormequat	.025 + 0.5	813	44,649 b	14	36.2	39.1 a
5. 2,4-D + chlorflurenol	.025 + 0.5	694	75,068 b	44	35.1	38.3 ab
CV (percent)[2]		10	52	--	2	1

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent not significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 20.--*Lint yield, immature bolls at first harvest, and certain tests including a second harvest at*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*
1. Check		1,078 a[1]	91,000 a	100	33.7 a	37.5 b
2. 2,4-D	0.033	964 b	19,000 c	31	33.5 a	38.5 a
3. Chlorflurenol	1.0	1,010 b	42,000 b	52	33.2 a	37.6 b
4. 2,4-D + chlormequat	.025 + 0.5	957 b	9,000 c	22	33.1 ab	38.0 ab
5. 2,4-D + chlorflurenol	.025 + 0.5	948 b	16,000 c	30	32.5 b	37.4 b
Test X treatment[2]		**	**		**	**
CV (percent)[3]		9	72	--	3	3

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent not significantly different at the 5-percent level by the F test.
[2]N.S., ** = not significant, and significant at the 1-percent level, respectively, for the test
[3]CV = coefficient of variation.

quality of Pima S-4 cotton treated with chemical termination on August 29, 1973, at Safford, Ariz.

Trash	Seed weight	Floaters	Germination	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*G/100 seed*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
7.3	12.8	7.5	96 a	1.42 bc	0.73	51	30.9	3.38
6.9	12.8	6.7	96 a	1.45 a	.76	52	30.2	3.57
7.2	12.6	4.6	98 a	1.42 bc	.71	50	31.8	3.45
7.5	12.9	6.2	92 b	1.42 c	.71	50	30.9	3.60
8.3	12.8	4.1	98 a	1.43 b	.72	51	32.4	3.61
14	1	51	1	1	3	3	3	5

level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are

indices of seed and fiber quality of cotton in 6 chemical termination Yuma, Ariz., and in California in 1973

Trash	Seed weight	Floaters	Germination	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*G/100 seed*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
10.2 b	11.0	10.2	93	1.26	0.63	50	25.2	3.91 c
12.6 a	11.0	9.5	95	1.25	.63	51	25.0	4.14 a
11.9 a	10.8	9.7	96	1.24	.62	49	24.9	4.00 bc
12.7 a	10.8	9.6	93	1.25	.63	50	24.7	4.07 ab
13.0 a	10.7	8.4	93	1.25	.63	50	25.4	4.03 abc
**	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
17	3	25	4	1	4	3	3	4

level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are

by treatment interaction.

TABLE 21.--*Tests 14 and 15: Effects of chemical termination treatments applied to*

Treatment	Application rate	Lint yield		
		DPL 16	S-4	Mean
	Lb ai/acre	*Lb/acre*	*Lb/acre*	*Lb/acre*
1. Check		1,275[1]	913 ab	1,094 ab
2. TD-1123 + chlorflurenol	0.033 + 0.5	1,184	751 b	967 c
3. BAS 0660	1.0	1,284	1,021 a	1,152 a
4. 2,4-D	.067	1,143	885 ab	1,014 bc
5. Do.	.033	1,280	1,003 a	1,142 a
Variety X treatment[2]				N.S.
CV (percent)[3]		6	13	8

TABLE 21.--Continued

Treatment	Application rate	DPL 16		
		Gin turnout	Lint	Trash
	Lb ai/acre	*Percent*	*Percent*	*Percent*
1. Check		35.1 a	37.2	5.6 c
2. TD-1123 + chlorflurenol	0.033 + 0.5	35.1 a	37.1	5.4 c
3. BAS 0660	1.0	35.5 a	37.4	5.1 c
4. 2,4-D	.067	32.3 b	36.2	10.8 a
5. Do.	.033	33.7 b	37.1	9.1 b
Variety X treatment[2]				
CV (percent)[3]		2	2	12

[1]Means within a column followed by the same letter do not differ significantly no letters, are not significantly different at the 5-percent level by the F test.
[2]N.S., *, ** = not significant, significant at the 5-percent level, and
[3]CV = coefficient of variation.

DPL 16 and Pima S-4 cotton in 2 tests on August 27, 1973, at Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Immature bolls			DE index		DPL 16 and S-4	
DPL 16	S-4	Mean	DPL 16	S-4	Seed weight	Floaters
No./acre	*No./acre*	*No./acre*			*G/100 seed*	*Percent*
6,670 a	34,031 a	20,351	100	100	11.0	7.7
1,134 b	33,215 a	17,175	24	115	11.4	10.6
1,452 b	9,211 b	5,332	22	15	10.8	8.3
136 b	7,442 b	3,789	12	25	11.1	10.6
182 b	10,799 b	5,491	2	22	10.9	9.1
		**			N.S.	N.S.
70	57	73	--	--	3	23

Germination			DPL 16 and S-4				
			Fiber length				
DPL 16	S-4	Mean	2.5-percent span	50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
91	90 ab	91	1.28 a	0.65	51	25.4	4.12
92	83 b	87	1.25 b	.62	50	26.7	4.09
96	95 a	96	1.27 ab	.64	50	25.2	4.11
100	85 b	92	1.27 a	.63	49	26.3	4.06
99	94 a	96	1.28 a	.64	49	26.0	4.11
		*	N.S.	N.S.	N.S.	N.S.	*
2	3	3	1	3	2	4	2

at the 5-percent level, according to Duncan's multiple range test. Means of columns having a CV, but significant at the 1-percent level, respectively, for the variety by treatment interaction.

TABLE 22.--*Test 16: Effects of different rates of 2,4-D and chlorflurenol applied to DPL 16*

Treatment and application rate (pounds per acre)	Lint yield	Immature bolls	DE index	Seed weight	Floaters
	Lb/acre	*No./acre*		*G/100 seed*	*Percent*
1. Check	1,559 a[1]	71,004 a	100	9.4	9.8
2,4-D + chlorflurenol:					
2. 0.008 + 0.125	1,484 ab	21,718 b	35	9.3	15.1
3. 0.008 + 0.375	1,531 ab	3,111 c	6	9.5	12.6
4. 0.008 + 0.625	1,465 abc	5,041 c	11	9.3	9.7
5. 0.008 + 0.875	1,437 abc	2,178 c	9	9.1	15.6
6. 0.017 + 0.125	1,437 abc	871 c	5	9.1	16.1
7. 0.017 + 0.375	1,484 ab	2,365 c	6	9.2	12.1
8. 0.017 + 0.625	1,475 abc	2,178 c	5	9.1	11.1
9. 0.017 + 0.875	1,409 bc	1,805 c	10	9.3	12.2
10. 0.025 + 0.125	1,428 bc	3,609 c	9	9.4	14.1
11. 0.025 + 0.375	1,447 abc	2,054 c	7	8.8	10.9
12. 0.025 + 0.625	1,456 abc	2,863 c	7	9.3	15.5
13. 0.025 + 0.875	1,409 bc	1,494 c	10	9.3	10.1
14. 0.033 + 0.125	1,419 bc	1,182 c	8	9.5	13.2
15. 0.033 + 0.375	1,419 bc	1,929 c	9	9.1	8.8
16. 0.033 + 0.625	1,353 c	1,369 c	11	9.4	10.6
17. 0.033 + 0.875	1,353 c	436 c	7	9.5	13.0
CV (percent)[2]	3	52	--	3	32
Summary					
2,4-D + chlorflurenol:					
0.008 + ([3])	1,479	8,012	16		
0.017 + ([3])	1,451	1,805	9		
0.025 + ([3])	1,435	2,505	12		
0.033 + ([3])	1,386	1,229	13		
([4]) + 0.125	1,442	6,845	17		
([4]) + 0.375	1,470	2,365	9		
([4]) + 0.625	1,437	2,863	12		
([4]) + 0.875	1,402	1,478	12		

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.
[3]All rates (0.125, 0.375, 0.625, 0.875).
[4]All rates (0.008, 0.017, 0.025, 0.033).

cotton at Phoenix, Ariz., on August 30, 1973, on lint yield, immature bolls, seed, and fiber

Gin turnout	Lint	Trash	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
34.2 a	37.1	7.9	1.13	0.56	49	20.6	4.28
33.9 ab	37.2	9.0	1.14	.56	49	20.9	4.34
33.5 abc	36.4	7.8	1.12	.54	48	20.8	4.54
33.4 abc	36.9	9.6	1.14	.56	49	20.9	4.47
33.3 abc	36.5	8.7	1.14	.56	50	20.4	4.30
32.7 cd	36.6	10.8	1.13	.55	49	20.4	4.23
33.3 abc	36.9	9.8	1.14	.57	50	20.5	4.29
33.1 abc	36.2	9.2	1.13	.54	48	20.7	4.50
32.8 bcd	37.0	11.3	1.15	.57	49	21.7	4.28
32.5 cd	35.1	7.3	1.15	.58	50	21.7	4.32
33.2 abc	36.8	9.9	1.15	.57	50	21.6	4.38
33.0 bc	36.9	11.0	1.12	.55	49	21.8	4.29
33.6 abc	37.4	10.0	1.16	.58	50	20.8	4.33
33.1 abc	36.9	10.2	1.15	.57	49	21.3	4.28
33.4 abc	36.9	9.4	1.16	.58	50	20.3	4.35
32.7 cd	36.2	9.9	1.14	.56	49	20.5	4.39
31.7 d	36.2	12.4	1.15	.58	50	21.3	4.31
1	1	15	2	5	3	3	5

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 23.--*Test 16: Effect of 16 different 2,4-D plus chlorflurenol mixtures applied to DPL 16 cotton on August 30, 1973, at the Cotton Research Center, Phoenix, Ariz., on daily flowering in relation to date of treatment*

Days from treatment	Treatment[1]																	
	1a	1b	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Flowers per 105 ft of row per day																	
-10	76	106	79	87	101	73	70	77	96	71	104	86	74	101	78	124	90	90
-2	8	21	2	16	14	22	2	19	11	19	15	23	15	27	14	27	10	8
0	6	12	1	5	8	10	7	13	9	3	7	10	24	9	13	27	6	9
5	6	11	0	4	7	9	2	4	11	5	2	20	8	13	10	11	3	9
6	3	7	1	8	3	9	2	4	5	1	2	7	6	2	5	12	3	4
7	6	4	0	2	2	9	2	3	5	3	2	4	9	11	3	15	2	3
8	1	12	0	3	1	6	1	1	6	0	0	4	7	3	7	10	3	1
12	2	1	2	2	2	2	0	1	3	3	1	3	5	3	1	9	0	1
13	0	3	1	0	0	0	0	1	0	0	0	2	5	0	2	5	0	2
18	1	0	7	1	1	1	4	3	1	3	1	3	2	1	1	3	0	1
19	0	4	3	2	0	6	5	1	1	6	2	1	9	0	1	2	1	0
20	2	1	4	2	1	4	10	3	1	9	0	1	7	0	0	3	0	0
21	4	6	5	2	4	8	9	6	2	17	1	1	8	2	5	1	0	2
22	5	0	4	0	3	3	6	5	6	6	1	1	2	0	2	0	0	1
25	5	4	14	3	3	11	18	4	2	11	2	2	16	0	2	0	0	4
26	11	6	12	1	2	8	16	3	1	10	3	0	7	0	3	1	1	4
27	14	3	26	5	2	5	13	6	1	8	7	2	12	4	2	0	3	4
28	11	4	24	6	1	2	8	8	4	6	5	3	4	1	5	0	2	6
29	15	7	23	3	2	3	4	4	3	6	5	5	6	1	7	0	6	3
32	16	8	11	4	0	1	1	7	3	2	9	6	1	2	4	0	0	2
33	23	3	26	3	1	1	5	0	1	0	8	4	2	1	4	0	3	2
34	19	8	28	3	3	0	2	3	0	4	15	2	2	0	3	0	1	2
35	29	22	27	6	4	0	6	4	0	1	17	6	1	1	7	0	1	4
36	22	12	29	1	0	0	0	2	0	2	9	3	1	3	8	1	1	0
40	68	37	65	12	8	1	3	7	2	1	19	11	3	4	16	1	2	8
41	2	1	5	2	1	0	0	1	1	0	1	1	2	0	0	0	0	3
42	24	15	31	5	2	0	4	4	1	0	14	2	1	1	6	1	1	1
43	44	28	51	3	4	2	6	7	0	0	17	5	2	1	11	0	2	1
46	74	42	39	11	13	2	6	13	3	5	18	6	0	3	22	2	6	10
47	86	38	76	16	5	0	4	10	6	2	19	8	0	2	14	2	5	4
48	84	47	52	8	8	5	2	8	10	7	20	10	1	4	13	2	5	3
49[2]	74	41	68	17	18	6	6	10	6	3	18	6	4	4	13	7	7	8
50[2]	84	61	90	25	24	5	7	15	5	7	25	16	2	3	13	4	13	1

[1]See table 22 for details of treatments. There were 2 sets of checks, 1a and 1b.
[2]Flowers counted but not tagged.

TABLE 24.--*Test 16: Effect of 16 different 2,4-D plus chlorflurenol mixtures applied to DPL 16 cotton on August 30, 1973, at the Cotton Research Center, Phoenix, Ariz., on daily boll set in relation to date of treatment*

Flowering days from treatment	Treatment[1]																	
	1a	1b	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Bolls per 105 ft of row per day of flowering																	
-10	7	19	6	23	11	18	5	22	26	14	8	15	20	17	18	31	3	8
-2	6	13	1	7	4	6	0	5	6	2	4	4	3	4	3	2	3	2
0	2	4	0	1	1	1	1	2	2	0	0	1	4	3	1	7	2	1
5	0	3	0	0	5	1	0	2	3	0	0	0	3	2	1	2	0	2
6	1	1	2	0	0	0	0	1	2	0	0	0	1	0	0	2	0	0
7	1	0	0	0	0	0	1	1	4	1	0	0	0	1	0	3	0	0
8	0	3	0	0	0	1	0	0	2	0	0	0	0	1	0	5	0	0
12	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0
13	0	1	0	0	0	0	0	1	0	0	0	2	1	0	0	2	0	0
18	0	0	4	1	0	0	3	2	0	1	0	0	0	0	0	1	0	0
19	0	0	0	0	0	1	3	0	0	1	0	1	1	0	0	0	0	0
20	0	0	0	0	0	2	3	1	1	3	0	1	0	0	0	1	0	0
21	1	2	4	1	1	0	0	1	2	3	1	1	3	0	0	0	0	1
22	1	0	3	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0
25	4	2	4	1	0	1	0	1	2	0	0	0	1	0	0	0	0	0
26	0	2	6	0	0	0	0	2	3	1	1	2	0	3	1	0	0	0
27	0	1	5	2	0	0	0	1	4	0	2	1	0	6	1	0	1	1
28	1	1	10	4	0	0	0	3	7	1	0	3	1	3	2	0	0	0
29	2	5	8	1	2	1	2	3	0	0	0	3	0	7	1	0	0	0
32	2	7	14	2	0	0	0	1	6	0	3	1	0	6	2	0	0	0
33	4	3	15	1	0	0	0	1	5	0	2	1	2	5	0	0	0	0
34	3	7	13	1	1	0	0	0	7	1	6	2	1	3	1	0	0	1
35	4	17	13	4	3	0	1	1	3	0	6	4	0	12	3	0	0	0
36	4	8	14	2	0	0	0	2	10	0	1	4	0	7	1	0	0	0
40	11	19	29	8	4	0	1	2	11	0	2	6	1	19	7	0	0	0
41	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
42	4	6	8	0	1	0	0	0	3	0	2	1	0	3	2	0	1	0
43	9	10	19	4	0	0	2	2	5	0	7	11	0	13	5	0	1	0
46	15	19	19	4	7	1	2	3	12	1	5	18	1	16	1	1	1	0
47	25	14	43	11	3	0	3	7	11	2	9	20	4	20	6	1	1	1
48	11	17	11	5	2	1	0	1	4	2	7	7	0	10	2	1	1	0

[1]See table 22 for details of treatments. There were 2 sets of checks, 1a and 1b.

TABLE 25.--*Tests 17 and 18: Comparison of methods of terminating fruiting of DPL 16 cotton in 1973 at Phoenix, Ariz., and their effects on lint yield, immature bolls, and several seed and fiber quality parameters*

Treatment	Treatment date	Test 17 Lint yield 1st pick 11-7	Test 17 Lint yield 2d pick 12-17	Test 17 Lint yield Total	Test 17 Immature bolls	Test 17 DE index
		Lb/acre	*Lb/acre*	*Lb/acre*	*No./acre*	
Chemical termination:						
2,4-D + chlorflurenol	8/27	711 cde[1]	139 a	850 ab	3,038 de	26
	9/4	629 de	137 a	765 bc	6,534 cd	54
	9/7	617 e	155 a	772 bc	10,814 bc	78
Defoliation:						
Def + paraquat	9/20	662 cde	58 b	720 c	3,692 de	43
	10/4	828 ab	78 b	905 a	9,736 cd	57
	10/19	839 a	94 b	933 a	17,969 a	100
Desiccation:						
Paraquat	9/20	679 cde	57 b	729 bc	1,470 e	30
	10/4	769 abc	82 b	851 ab	7,187 cde	49
	10/19	730 bcd	84 b	815 abc	16,204 ab	103
CV (percent)[2]		9	29	9	49	--

TABLE 25.--Continued

Treatment	Test 17 Pink bollworm Plant	Test 17 Pink bollworm Soil	Test 17 Pink bollworm Total	Test 18 Lint yield	Test 18 Immature bolls	Test 18 DE index	Gin turnout Test 17 1st pick	Gin turnout Test 17 2d pick	Gin turnout Test 18
	No./acre	*No./acre*	*No./acre*	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*
Chemical termination:									
2,4-D + chlorflurenol	7,623	9,801	17,424	1,316	908 e	10	29.9 c	27.9	35.1 bc
	1,089	13,068	14,157	1,243	1,316 e	20	30.3 bc	27.3	34.9 bc
	5,445	18,513	23,958	1,320	5,037 cd	56	30.5 bc	27.0	34.6 c
Defoliation:									
Def + paraquat	2,178	20,691	22,869	1,348	8,168 ab	89	31.0 bc	25.7	35.5 abc
	6,534	21,780	28,314	1,334	9,801 a	109	31.3 b	26.3	35.9 ab
	5,445	21,780	27,225	1,307	8,848 ab	100	32.6 a	27.6	35.3 abc
Desiccation:									
Paraquat	2,178	5,445	7,623	1,257	2,995 de	38	31.0 bc	24.2	35.2 bc
	1,089	17,424	18,513	1,325	6,579 bc	73	31.1 b	28.1	35.9 ab
	4,356	26,136	31,581	1,302	6,035 bc	69	30.6 bc	26.6	36.2 a
CV (percent)[2]	137	61	60	6	32	--	2	6	2

TABLE 25.--Continued

Treatment	Lint Test 17 1st pick	Lint Test 17 2d pick	Lint Test 18	Trash Test 17 1st pick	Trash Test 17 2d pick	Trash Test 18
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Chemical termination:						
2,4-D + chlorflurenol	35.5 abc	36.0	38.1	15.7 a	22.4 bcd	7.8 b
	35.9 ab	36.2	38.3	15.4 a	24.7 a-d	8.8 ab
	36.1 a	35.9	38.1	15.4 a	24.7 a-d	9.2 a
Defoliation:						
Def + paraquat	34.2 c	34.6	37.1	9.5 bc	25.7 ab	4.4 d
	34.8 abc	35.3	37.8	10.1 bc	25.5 abc	5.3 cd
	35.4 abc	34.2	37.3	8.0 c	19.3 d	5.2 cd
Desiccation:						
Paraquat	34.9 abc	33.9	37.3	9.6 bc	28.7 a	5.8 c
	34.9 abc	34.9	37.8	11.0 bc	19.9 cd	4.9 cd
	34.8 bc	34.5	38.1	12.2 b	22.8 bcd	4.9 cd
CV (percent)[2]	2	4	2	16	14	13

See footnotes at end of table.

TABLE 25.--*Tests 17 and 18: Comparison of methods of terminating fruiting of DPL 16 cotton in 1973 at Phoenix, Ariz., and their effects on lint yield, immature bolls, and several seed and fiber quality parameters*-Continued

	Fiber length		Fiber	Fiber	
	2.5-percent span	50-percent span	uniformity	strength	Micronaire
	Inches	*Inch*	*Percent*	*Percent*	
Chemical termination:					
2,4-D + chlorflurenol	1.12	0.48	0.42 a	17.9	3.97 ab
	1.11	.46	.42 abc	17.9	3.96 ab
	1.11	.46	.41 abc	17.6	3.94 ab
Defoliation:					
Def + paraquat	1.12	.45	.40 c	17.8	3.57 c
	1.13	.48	.42 ab	17.5	3.92 ab
	1.11	.46	.41 abc	17.7	4.03 a
Desiccation:					
Paraquat	1.10	.44	.40 c	17.6	3.65 c
	1.12	.46	.41 abc	17.3	3.85 b
	1.12	.46	.41 bc	17.2	3.90 ab
Test X treatment[3]	N.S.	N.S.	N.S.	N.S.	N.S.
CV (percent)[2]	2	5	3	3	3

TABLE 25.-Continued

Treatment	Yarn tenacity				Loss in combing			
	Test 17				Test 17			
	1st pick	2d pick	Test 18	Mean	1st pick	2d pick	Test 18	Mean
	Grams force/tex				*Percent*			
Chemical termination:								
2,4-D + chlorflurenol	11.0 bc	9.2 a	10.6 b	10.2 a	21.4 cde	22.7 abc	14.6 ijk	19.6 a
	11.5 ab	8.7 a	10.6 b	10.2 a	21.5 cde	23.9 a	15.7 hi	20.4 a
	11.1 bc	9.0 a	10.8 b	10.3 a	23.7 a	22.9 abc	13.1 jkl	19.9 a
Defoliation:								
Def + paraquat	10.5 c	7.8 b	11.4 a	9.9 ab	19.0 fg	23.2 ab	12.5 l	18.2 ab
	11.1 bc	8.7 a	11.0 a	10.2 a	16.6 h	20.1 ef	14.0 jk	16.9 bc
	10.6 c	9.0 a	9.0 d	9.5 b	16.5 h	18.7 fg	14.6 ij	16.6 c
Desiccation:								
Paraquat	10.9 bc	8.0 b	10.8 b	9.9 ab	18.9 fg	20.7 de	12.0 l	17.2 bc
	11.9 a	8.8 a	10.4 bc	10.3 a	18.6 fg	21.7 bcd	13.0 kl	17.8 bc
	11.3 ab	8.9 a	9.8 c	10.0 ab	18.3 g	20.0 ef	13.2 jkl	17.2 bc
Test X treatment[3]				**				**
CV (percent)[2]				5				6

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not significantly different at the 5-percent level by the F test.

[2]CV = coefficient of variation.

[3]N.S., ** = not significant, and significant at the 1-percent level, respectively, for the test by treatment interaction.

TABLE 26.--*Test 19: Effects of chemical termination treatments applied to DPL 16 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash	Seed weight	Floaters
	Lb/ai acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*G/100 seed*	*Percent*
Check		1,628[1]	26,013 a	100	35.3	37.3	5.3	10.1	25.6 a
2,4-D	0.033	1,431	5,064 b	32	35.8	37.7	5.3	10.2	17.5 b
TD-1123 + chlorflurenol	1.0 + 0.5	1,252	0 b	27	34.5	37.7	6.0	10.1	27.0 a
2,4-D + chlormequat	.025 + 0.5	1,411	613 b	16	34.9	37.2	6.1	10.1	19.1 b
2,4-D + chlorflurenol	.017 + 0.375	1,440	1,715 b	18	35.8	37.8	5.3	10.1	18.9 b
CV (percent)[2]		18	70	--	2	2	13	2	19

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 27.--*Test 20: Effects of chemical termination treatments applied to DPL 16 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash	Seed weight	Floaters
	Lb/ai acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*G/100 seed*	*Percent*
Check		1,339[1]	74,243 a	100	33.5	36.9	9.3	11.3	18.6 c
2,4-D	0.033	1,319	3,880 b	7	33.3	37.0	10.0	10.9	21.9 bc
TD-1123 + chlorflurenol	1.0 + 0.5	1,123	572 b	17	33.3	36.5	8.7	11.1	23.5 ab
2,4-D + chlormequat	.025 + 0.5	1,290	1,552 b	6	33.1	36.5	9.2	11.3	21.9 bc
2,4-D + chlorflurenol	.017 + 0.375	1,307	13,476 b	21	33.3	36.9	9.8	11.2	26.8 a
CV (percent)[2]		11	78	--	2	1	12	3	12

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 28.--*Test 21: Effects of chemical termination treatments applied to DPL 16 cotton on bolls at harvest,*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash	Seed weight	Floaters
	Lb/ai acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*G/100 seed*	*Percent*
Check		1,393[1]	14,865 a	100	33.3	36.3	8.2	9.6	18.9
2,4-D	0.033	1,374	694 b	6	32.4	36.7	11.8	10.2	14.4
TD-1123 + chlorflurenol	1.0 + 0.5	1,332	123 b	5	30.6	36.7	16.8	10.6	18.0
2,4-D + chlormequat	.025 + 0.5	1,394	490 b	3	31.8	36.0	11.7	9.9	16.8
2,4-D + chlorflurenol	.017 + 0.375	1,465	3,961 b	21	32.9	36.2	9.0	9.8	17.0
CV (percent)[2]		6	117	--	7	1	51	7	21

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

September 5, 1974, at Brawley, Calif., on lint yield, immature bolls at harvest, seed, and fiber

Emergence		Average time to emerge		Dead seedlings	Fiber length 2.5-percent span	Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Greenhouse	Field	Greenhouse	Field	field					
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
94 a	47 b	6.0	27.7 ab	3	1.11	0.56	51	21.7	4.29 b
80 b	54 ab	5.7	28.8 a	1	1.11	.55	50	22.5	4.78 a
98 a	68 a	5.2	27.4 ab	1	1.09	.54	49	21.5	4.85 a
82 b	26 c	5.5	26.6 b	3	1.09	.54	49	22.3	4.72 a
94 a	53 ab	5.2	26.0 b	3	1.10	.53	48	21.4	4.74 a
6	22	6	5	117	2	4	2	2	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

September 5, 1974, at Yuma, Ariz., on lint yield, immature bolls at harvest, seed, and fiber

Emergence		Average time to emerge		Dead seedlings	Fiber length 2.5-percent span	Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Greenhouse	Field	Greenhouse	Field	field					
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
99 a	83 a	5.9	24.5 b	1	1.13	0.53	47	20.4	4.38
92 b	57 b	5.8	27.0 a	1	1.12	.54	48	20.1	4.29
99 a	60 b	5.9	24.9 b	1	1.13	.54	48	19.7	4.18
97 a	55 b	5.8	26.2 ab	3	1.12	.54	48	20.0	4.27
98 a	86 a	5.8	24.7 b	3	1.14	.55	48	20.4	4.25
2	22	4	5	117	1	4	3	2	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

August 26, 1974, at the Cotton Research Center, Phoenix, Ariz., on lint yield, immature seed, and fiber

Emergence		Average time to emerge		Dead seedlings	Fiber length 2.5-percent span	Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Greenhouse	Field	Greenhouse	Field	field					
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
97 a	54 a	6.4	28.0 ab	0	1.11	0.55	49	21.3	4.31
80 c	42 a	7.1	28.3 a	1	1.14	.56	50	20.3	4.44
97 a	49 a	6.6	26.0 b	1	1.10	.53	49	19.8	4.58
84 c	37 a	7.1	27.6 ab	1	1.11	.54	49	20.2	4.53
91 b	54 a	6.3	27.1 ab	3	1.13	.56	49	20.6	4.29
4	22	7	5	117	2	3	2	4	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 29.--*Test 22: Effects of chemical termination treatments applied to Pima S-4 cotton on bolls at harvest,*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Pink bollworms 1-29-75	Gin turnout	Lint	Trash	Seed weight
	Lb ai/acre	*Lb/acre*	*No./acre*		*No./acre*	*Percent*	*Percent*	*Percent*	*G/100 seed*
1. Check		661 a[1]	95,968 a	100	15,246 a	33.2	36.7 bc	9.6	12.4
2. 2,4-D	0.033	502 b	3,063 b	27	--	33.6	38.1 a	11.8	12.7
3. TD-1123 + chlorflurenol	1.0 + 0.5	369 c	2,532 b	47	--	32.5	36.1 c	10.1	12.8
4. 2,4-D + chlormequat	.025 + 0.5	496 b	0 b	25	0 b	32.3	36.6 bc	11.7	12.4
5. 2,4-D + chlorflurenol	.017 + 0.375	514 b	5,595 b	28	0 b	33.2	37.1 b	10.6	12.4
CV (percent)[2]		13	23	--	148	2	1	14	3

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 30.--*Test 23: Effects of chemical termination treatments applied to DPL 16 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash	Seed weight	Floaters
	Lb/ai acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*G/100 seed*	*Percent*
Check		1,186[1]	9,842 a	100	35.4	37.6	6.0	10.3	10.8
2,4-D	0.033	1,227	41 b	-3	35.7	37.9	5.8	10.5	10.8
TD-1123 + chlorflurenol	1.0 + 0.5	1,090	0 b	8	35.8	38.0	5.8	10.4	12.6
2,4-D + chlormequat	.025 + 0.5	1,278	41 b	-7	36.1	38.3	5.7	10.5	9.4
2,4-D + chlorflurenol	.017 + 0.375	1,239	123 b	-3	35.7	37.8	5.6	10.4	12.1
CV (percent)[2]		8	116	--	2	1	12	2	19

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

August 26, 1974, at the Cotton Research Center, Phoenix, Ariz., on lint yield, immature seed, and fiber

Floaters	Emergence: Greenhouse	Emergence: Field	Average time to emerge: Greenhouse	Average time to emerge: Field	Dead seedlings field	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
50.8	95 a	56 a	5.6 c	24.9	2	1.36	0.69	51	31.4	3.58
46.9	77 b	23 b	6.7 b	25.6	2	1.35	.66	49	31.1	3.76
52.7	90 a	31 b	5.6 c	25.2	2	1.33	.65	49	30.2	3.56
52.8	67 c	22 b	8.7 a	26.3	2	1.37	.69	50	31.1	3.67
45.5	91 a	48 a	5.9 bc	24.8	2	1.37	.70	51	31.0	3.71
17	8	22	8	5	117	1	3	2	3	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

August 29, 1974, at Marana, Ariz., on lint yield, immature bolls at harvest, seed, and fiber

Emergence: Greenhouse	Emergence: Field	Average time to emerge: Greenhouse	Average time to emerge: Field	Dead seedlings field	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
92 a	67 a	5.4	27.2	2	1.08	0.49	45	17.7	4.48
85 b	48 b	5.7	26.9	2	1.06	.49	46	17.7	4.63
94 a	39 b	5.8	26.4	2	1.08	.50	46	17.2	4.63
82 b	51 ab	5.5	28.0	4	1.05	.48	46	17.6	4.56
93 a	57 ab	5.6	27.7	1	1.06	.49	46	18.3	4.58
5	22	3	5	117	4	7	4	4	5

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 31.--*Test 24: Effects of chemical termination treatments applied to Pima S-4 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash	Seed weight	Floaters
	Lb/ai acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*G/100 seed*	*Percent*
Check		568 a[1]	94,580 a	100	36.4	38.6	5.8	13.0	30.2
2,4-D	0.033	523 a	47,126 b	58	36.1	38.9	7.1	12.9	29.8
TD-1123 + chlorflurenol	1.0 + 0.5	461 b	20,051 c	40	36.2	38.3	5.5	13.4	29.8
2,4-D + chlormequat	.025 + 0.5	519 a	19,888 c	30	36.6	39.2	6.8	13.2	34.3
2,4-D + chlorflurenol	.017 + 0.375	539 a	49,128 b	57	36.0	38.8	7.2	13.2	31.1
CV (percent)[2]		7	34	--	2	1	15	2	16

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 32.--*Mean effects of chemical termination treatments in 6 tests in California*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash	Seed weight	Floaters
	Lb/ai acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*G/100 seed*	*Percent*
Check		1,129 a[1]	13,146 a	100	34.5	37.2 b	7.4	11.1	25.8
2,4-D	0.033	1,063 a	2,194 b	25	34.5	37.7 a	8.6	11.2	23.5
TD-1123 + chlorflurenol	1.0 + 0.5	938 b	970 c	24	34.0	37.2 b	8.8	11.4	27.2
2,4-D + chlormequat	.025 + 0.5	1,065 a	941 c	13	34.1	37.3 b	8.5	11.2	25.7
2,4-D + chlorflurenol	.017 + 0.375	1,084 a	3,083 b	28	34.5	37.4 ab	7.9	11.2	25.2
Test X treatment[2]		N.S.	**	--	N.S.	**	N.S.	N.S.	N.S.
CV (percent)[3]		13	57		3	1	31	3	19

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]N.S., ** = not significant, and significant at the 1-percent level, respectively, for the test by
[3]CV - coefficient of variation.

August 29, 1974, at Safford, Ariz., on lint yield, immature bolls at harvest, seed, and fiber

Emergence		Average time to emerge		Dead seedlings	Fiber length		Fiber		
Green-house	Field	Green-house	Field	field	2.5-percent span	50-percent span	uni-formity	Fiber strength	Micro-naire
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
90 ab	52 a	5.7 bc	26.2 b	2	1.35	0.68	51	29.9	3.73
75 cd	30 b	6.4 ab	28.1 ab	2	1.34	.68	51	29.7	3.78
94 a	51 a	5.5 c	26.9 ab	1	1.32	.67	51	29.4	3.66
69 d	32 b	7.0 a	28.2 a	1	1.33	.64	48	29.8	3.68
82 bc	43 ab	6.0 bc	27.3 ab	2	1.35	.67	50	29.6	3.79
10	22	10	5	117	2	4	3	3	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

and Arizona in 1974 on lint yield, immature bolls at harvest, seed, and fiber

Emergence		Average time to emerge		Dead seedlings	Fiber length		Fiber		
Green-house	Field	Green-house	Field	field	2.5-percent span	50-percent span	uni-formity	Fiber strength	Micro-naire
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
95 a	60 a	5.6 b	26.4 b	1.6	1.19	0.58	48.9	23.7 a	4.13 b
81 c	42 c	6.2 a	27.4 a	1.4	1.19	.58	48.9	23.6 a	4.28 a
95 a	50 b	5.8 b	26.1 b	1.5	1.18	.57	48.6	23.0 b	4.25 a
80 c	37 c	6.4 a	27.1 a	1.9	1.18	.57	48.3	23.5 a	4.24 a
91 b	57 a	5.8 b	26.3 b	2.0	1.19	.58	48.6	23.5 a	4.23 a
**	**	**	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	**
6	21	7	4	98	2	4	3	3	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

treatment interaction.

TABLE 33.--*Test 25: Effects of 7 chemical termination treatments applied to DPL 16 immature bolls,*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Seed weight	Floaters	Emergence: Greenhouse	Emergence: Field
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*	*Percent*	*Percent*
1. Check		1,706 a[1]	11,475 a	100	37.9	40.6	9.7	22	96	53
2. 2,4-D + chlorflurenol	0.017 + 0.375	1,550 abc	2,573 d	32	34.4	39.5	9.9	19	93	42
3. MCPA + chlorflurenol	.017 + 0.375	1,630 ab	2,940 d	30	41.2	40.3	9.9	20	94	55
4. Silvex + chlorflurenol	.017 + 0.375	1,630 ab	3,757 cd	37	35.6	39.3	9.8	18	97	63
5. Glyphosate	1.0	1,401 cd	6,616 bc	76	38.1	39.4	9.7	26	98	57
6. 2,4-D + BAS 0660	.017 + 1.0	1,575 abc	1,674 d	22	36.6	40.6	9.6	25	82	47
7. TD-1123 + BAS 0660	1.0 + 1.0	1,437 bcd	531 d	20	39.5	40.7	9.4	25	96	48
8. TD-1123 + chlormequat	1.0 + 0.5	1,259 d	653 d	32	36.5	39.5	9.7	18	96	56
CV (percent)[2]		8	49	--	11	4	3	22	3	19

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 34.--*Test 26: Effects of different rates of 2,4-D and chlorflurenol in mixture applied on immature bolls,*

	Treatment: 2,4-D rate	Treatment: Chlorflurenol rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout	Lint	Trash
	Lb ai/acre	*Lb ai/acre*	*Lb/acre*	*No./acre*		*G/100 seed*	*Percent*	*Percent*	*Percent*	*Percent*
1.	0	0	1,503[1]	22,011 a	100	10.5	22.0	33.0	36.9	10.6 abc
2.	.008	.125	1,445	4,819 b	26	10.6	20.1	33.2	36.4	8.7 c
3.	.008	.375	1,437	2,491 bc	16	10.5	17.6	32.8	36.6	10.3 abc
4.	.008	.625	1,420	1,307 c	11	10.2	20.8	32.4	36.5	11.1 ab
5.	.017	.125	1,480	2,450 bc	13	10.7	15.4	33.3	36.7	9.2 bc
6.	.017	.375	1,419	2,042 bc	15	10.7	19.7	33.1	36.3	8.9 c
7.	.017	.625	1,439	735 c	8	10.7	20.5	32.1	36.3	11.6 a
8.	.025	.125	1,404	1,266 c	12	11.1	14.2	32.8	36.7	10.6 abc
9.	.025	.375	1,425	1,021 c	10	10.6	18.5	32.3	36.1	10.9 ab
10.	.025	.625	1,399	653 c	10	10.6	16.4	31.8	36.3	11.9 a
CV (percent)[2]			5	48	--	4	22	2	1	12

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

cotton on August 27, 1974, at the Cotton Research Center, Phoenix, Ariz., on lint yield, seed, and lint

Time to emerge		2,4-D symptoms on seedlings			Fiber length				
Green-house	Field	Slight	Severe	Dead seedlings	2.5-percent span	50-percent span	Fiber uniformity	Fiber strength	Micronaire
Days	*Days*	*Percent*	*Percent*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
6.4	26.7 abc	0	0	3	1.14	0.57	50	20.4	4.20 d
6.6	27.3 a	2.3	.3	3	1.11	.56	51	20.2	4.54 ab
6.5	26.4 a-d	1.0	0	1	1.11	.55	49	19.4	4.48 abc
6.8	26.6 a-d	1.0	0	3	1.10	.53	49	20.4	4.37 bcd
6.2	25.9 bcd	0	0	2	1.11	.54	49	20.1	4.56 ab
6.8	27.6 a	7.0	6.3	1	1.11	.55	50	20.5	4.50 ab
6.5	27.1 ab	0	0	2	1.12	.55	50	19.7	4.44 bc
6.4	25.9 cd	0	0	1	1.10	.55	50	20.1	4.68 a
5	3	--	--	82	2	3	2	3	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

August 26, 1974, to DPL 16 cotton for chemical termination at Phoenix, Ariz., on lint yield, seed, and fiber

Emergence		Time to emerge			Fiber length				
Green-house	Field	Green-house	Field	Dead seedlings field	2.5-percent span	50-percent span	Fiber uni-formity	Fiber strength	Micro-naire
Percent	*Percent*	*Days*	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
97	48	6.1	27.8	1	1.10	0.52	47	19.7	4.39
94	54	5.8	27.0	2	1.09	.53	48	19.6	4.51
96	58	5.6	27.0	1	1.09	.53	48	18.5	4.52
94	46	5.6	26.7	1	1.08	.51	47	19.3	4.73
94	50	6.0	27.8	1	1.08	.50	47	19.1	4.62
97	55	5.9	27.3	2	1.10	.52	48	19.7	4.61
95	57	6.2	27.5	1	1.10	.53	48	20.0	4.43
94	45	6.0	27.0	1	1.10	.52	47	18.8	4.63
93	43	5.9	27.4	3	1.09	.51	47	19.1	4.35
96	41	5.7	27.8	3	1.06	.49	46	18.6	4.63
4	21	5	4	93	3	6	3	4	4

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 35.--*Test 27. Effects of 4 rates of TD-1123 applied as chemical termination treatments to DPL 16 bolls, seed, and fiber*

Treatment	Application rate	Lint yield	Immature bolls	Lint	Seed weight	Floaters
	Lb ai/acre	*Lb/acre*	*No./acre*	*Percent*	*G/100 seed*	*Percent*
1. Check		1,433[1]	129,577 a	36.1	10.6	22.0 c
2. TD-1123 + chlorflurenol	0.5 + 0.5	1,360	24,911 b	36.2	10.5	21.1 c
3. Do.	1.0 + 0.5	1,474	11,925 bc	36.4	10.6	25.1 bc
4. Do.	1.5 + 0.5	1,496	7,024 c	36.6	11.0	27.6 ab
5. Do.	2.0 + 0.5	1,464	6,942 c	36.4	10.6	31.7 a
CV (percent)[2]		6	30	1	4	12

TABLE 35.--Continued

Treatment	Lint yield	Immature bolls	Lint	Seed weight	Floaters	Emergence	
						Green-house	Field
	Lb/acre	*No./acre*	*Percent*	*G/100 seed*	*Percent*	*Percent*	*Percent*
1. Check	186 a	80,613 a	39.4	9.6	17.2 c	91	79 a
2. TD-1123 + chlorflurenol	70 b	6,452 b	41.5	9.2	78.7 a	93	54 b
3. Do.	35 c	123 b	40.9	9.0	70.7 ab	89	49 b
4. Do.	19 c	41 b	41.6	9.1	68.3 ab	86	29 b
5. Do.	17 c	0 b	39.6	9.1	61.5 b	88	47 b
CV (percent)[2]	32	48	6	5	15	7	31

TABLE 35.--Continued

Treatment	Third pick (11-11-74)			Total lint	Total lint		
	Lint yield	Immature bolls	Lint	3 picks	1st pick	2d pick	3d pick
	Lb/acre	*No./acre*	*Percent*	*Lb/acre*	*Percent*	*Percent*	*Percent*
1. Check	86 a	41,981 a	36.2	1,705 a	84.0	10.9	5.1
2. TD-1123 + chlorflurenol	6 b	1,879 b	33.3	1,436 b	94.7	4.9	.4
3. Do.	0 b	0 b	--	1,509 b	97.7	2.3	0
4. Do.	0 b	0 b	--	1,516 b	98.7	1.3	0
5. Do.	0 b	0 b	--	1,481 b	98.9	1.1	0
CV (percent)[2]	96	31	--	5	--	--	--

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.

[2]CV = coefficient of variation.

cotton on August 26, 1974, at the Cotton Research Center, Phoenix, Ariz., on lint yield, immature for 3 picks

First pick (9-30-74)

Emergence, greenhouse	Average time to emerge greenhouse	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Days*	*Inches*	*Inch*	*Percent*	T_1	
97	4.0	1.17	0.60	52	21.9	4.50
99	4.2	1.14	.58	51	22.0	4.59
97	4.0	1.16	.60	51	21.8	4.45
99	4.2	1.15	.58	51	21.2	4.41
97	4.4	1.15	.59	51	21.3	4.39
1	5	2	4	2	3	2

Second pick (10-23-74)

Average time to emerge: Green-house	Average time to emerge: Field	Dead seedlings	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Days	*Days*	*No./100 seed*	*Inches*	*Inch*	*Percent*	T_1	
8.2	25.8	5	1.13	0.58 a	51 a	20.8 ab	4.48 a
6.9	26.2	4	1.09	.54 ab	50 a	21.7 a	3.79 b
6.8	25.3	1	1.12	.52 bc	46 b	19.9 b	2.81 c
7.1	24.2	2	1.09	.49 c	45 b	20.0 b	2.80 c
6.7	25.9	4	1.11	.50 bc	45 b	18.6 c	2.62 c
11	6	88	3	5	4	3	9

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 36.--*Test 28: Seed cotton yield, immature bolls at harvest, defruiting efficiency index, and treated with 4 chemical termination treatments on 6 dates in 1974 at the*

Treatment	Application rate	Treatment date 8/15	8/21	8/26	8/30	9/3	9/10	Mean
	Lb ai/acre	*Seed cotton yield (lb/acre)*						
Check		2,348[1]	2,263	2,383	2,298	2,317	2,337	2,324 a
2,4-D	0.033	1,995	2,003	2,182	2,101	2,152	2,328	2,127 bc
Chlorflurenol	1.0	2,153	2,153	2,238	2,129	2,145	2,252	2,178 b
2,4-D + chlormequat	.025 + .5	1,889	1,927	2,088	2,133	2,109	2,211	2,060 c
2,4-D + chlorflurenol	.025 + .5	1,915	2,058	2,286	2,071	2,193	2,180	2,117 bc
Treatment X date[2]								N.S.
CV (percent)[3]								7
		DE index						
Check		100	100	100	100	100	100	100
2,4-D	0.033	19	14	10	14	26	40	22
Chlorflurenol	1.0	9	9	35	24	82	64	38
2,4-D + chlormequat	.025 + .5	20	21	14	10	24	55	25
2,4-D + chlorflurenol	.025 + .5	18	10	8	15	43	72	29
Treatment X date[2]								
CV (percent)[3]								
		Lint (percent)						
Check		36.2	36.2	36.6	36.3	36.2	36.2	36.3
2,4-D	0.033	36.3	36.7	36.5	36.6	36.0	36.1	36.4
Chlorflurenol	1.0	36.2	36.6	36.4	35.9	36.0	35.9	36.2
2,4-D + chlormequat	.025 + .5	35.8	36.1	36.3	36.0	36.4	36.5	36.2
2,4-D + chlorflurenol	.025 + .5	35.5	36.6	36.1	36.3	35.5	36.2	36.0
Treatment X date[2]								N.S.
CV (percent)[3]								2
		Seed weight (g/100 seed)						
Check		9.7	9.1	9.8	9.3	9.4	9.4	9.4
2,4-D	0.033	9.7	9.6	10.0	9.3	9.5	9.6	9.6
Chlorflurenol	1.0	9.5	9.3	9.7	9.4	10.0	9.6	9.6
2,4-D + chlormequat	.025 + .5	9.9	9.2	9.3	9.8	9.7	9.4	9.6
2,4-D + chlorflurenol	.025 + .5	9.5	9.5	9.5	9.5	9.9	9.6	9.6
Treatment X date[2]								N.S.
CV (percent)[3]								4
		Emergence, greenhouse (percent)						
Check		98	95	94	95	96	97	96 a
2,4-D	0.033	66	83	76	80	90	85	80 c
Chlorflurenol	1.0	96	96	91	96	96	97	95 a
2,4-D + chlormequat	.025 + .5	74	77	82	87	85	83	81 c
2,4-D + chlorflurenol	.025 + .5	82	90	90	87	91	94	89 b
Treatment X date[2]								N.S.
CV (percent)[3]								9

See footnotes at end of table.

certain indices of seed and fiber quality of DPL 16 cotton
Cotton Research Center, Phoenix, Ariz.

Treatment date						
8/15	8/21	8/26	8/30	9/3	9/10	Mean
			Immature bolls (No./acre)			
13,436	12,823	11,516	18,173	13,599	16,621	14,361 a
490	368	204	1,021	2,614	6,575	1,879 c
82	572	3,349	3,226	10,169	10,005	4,567 b
123	776	163	449	2,042	8,249	1,967 c
0	123	449	858	5,146	10,944	2,920 bc
						N.S.
						84
			Gin turnout (percent)			
33.5	33.3	33.7	33.4	33.1	33.4	33.4 a
32.5	33.3	33.2	33.6	33.1	32.9	33.1 ab
33.2	34.0	33.4	33.2	33.4	33.1	33.4 a
32.5	32.8	32.7	32.6	33.1	33.2	32.8 b
31.7	33.3	32.7	32.2	32.0	32.7	32.4 c
						N.S.
						2
			Trash (percent)			
7.5	8.0	7.8	7.8	8.4	7.7	7.9 c
10.5	9.2	9.1	8.2	8.1	8.9	9.0 b
8.2	7.2	8.2	7.4	7.1	8.0	7.7 c
9.1	9.1	10.0	9.4	9.0	9.1	9.3 b
10.7	8.9	9.5	11.1	9.9	9.7	10.0 a
						N.S.
						12
			Floaters (percent)			
15.4	20.3	19.1	19.5	17.8	16.3	18.1 a
18.3	12.2	13.4	14.4	15.3	15.8	14.9 b
15.9	16.6	14.2	17.1	16.4	15.8	16.0 b
16.5	16.3	15.9	11.3	12.8	15.4	14.7 b
14.3	17.1	14.8	14.1	11.8	15.7	14.6 b
						N.S.
						21
			Emergence, field (percent)			
67	68	61	62	54	63	62 a
36	52	31	50	44	57	45 c
67	61	64	60	54	59	61 a
40	46	38	52	41	57	46 c
45	59	44	54	52	60	52 b
						N.S.
						17

TABLE 36.--*Test 28: Seed cotton yield, immature bolls at harvest, defruiting efficiency index, and treated with 4 chemical termination treatments on 6 dates in 1974 at the Cotton Research*

Treatment	Application rate	Treatment date 8/15	8/21	8/26	8/30	9/3	9/10	Mean
	Lb ai/acre	*Time to emerge, greenhouse (days)*						
Check		4.5	4.5	4.6	4.8	4.8	4.4	4.6 b
2,4-D	0.033	5.6	5.4	5.3	5.7	4.9	5.0	5.3 a
Chlorflurenol	1.0	4.6	4.7	4.5	4.4	4.2	5.2	4.6 b
2,4-D + chlormequat	.025 + .5	6.2	5.8	5.5	5.2	4.9	5.1	5.4 a
2,4-D + chlorflurenol	.025 + .5	5.8	4.9	5.2	5.7	5.0	4.6	5.2 a
Treatment X Date[2]								N.S.
CV (percent)[3]								7
		Dead seedlings, field (No./100 planted seed)						
Check		2	1	2	0	3	1	1 b
2,4-D	0.033	2	0	3	1	2	3	2 ab
Chlorflurenol	1.0	3	2	1	3	5	2	3 a
2,4-D + chlormequat	.025 + .5	1	2	1	3	3	1	2 ab
2,4-D + chlorflurenol	.025 + .5	2	2	1	2	6	1	2 ab
Treatment X date[2]								N.S.
CV (percent)[3]								97
		Fiber length, 50-percent span (inch)						
Check		0.52	0.51	0.45	0.50	0.48	0.52	0.50
2,4-D	0.033	.51	.49	.49	.49	.53	.53	.51
Chlorflurenol	1.0	.48	.47	.55	.50	.52	.52	.50
2,4-D + chlormequat	.025 + .5	.51	.51	.53	.54	.58	.46	.52
2,4-D + chlorflurenol	.025 + .5	.47	.52	.50	.55	.54	.49	.51
Treatment X date[2]								N.S.
CV (percent)[3]								1
		Fiber strength (T_1)						
Check		18.8	20.2	17.8	18.9	19.2	18.7	18.9
2,4-D	0.033	19.0	18.8	18.4	18.3	20.4	19.2	19.0
Chlorflurenol	1.0	18.5	18.5	19.9	18.9	19.5	19.5	19.1
2,4-D + chlormequat	.025 + .5	19.3	18.9	19.9	19.2	19.7	19.0	19.3
2,4-D + chlorflurenol	.025 + .5	18.1	19.6	19.6	18.7	19.3	18.4	18.9
Treatment X date[2]								N.S.
CV (percent)[3]								4
		Pink bollworm, 11-29-74 (No./acre)						
Check		10,890 a	--	--	--	--	--	--
2,4-D	0.033	--	--	--	--	--	--	--
Chlorflurenol	1.0	--	--	--	--	--	--	--
2,4-D + chlormequat	.025 + .5	1,089 b	--	0 b	--	--	--	2,178 b
2,4-D + chlorflurenol	.025 + .5	--	--	--	--	--	--	--
Treatment X date[2]								N.S.
CV (percent)[3]								124

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, having a CV, but no letters, are not significantly different at the 5-percent level by the F test.

[2]N.S. = not significant.

[3]CV = coefficient of variation.

certain indices of seed and fiber quality of DPL 16 cotton Center, Phoenix, Ariz.-Continued

Treatment date						
8/15	8/21	8/26	8/30	9/3	9/10	Mean
			Time to emerge, field (days)			
24.3	25.2	26.1	26.5	25.0	24.7	25.3 b
25.2	26.5	27.0	26.3	25.5	24.3	25.8 b
24.5	25.5	25.6	26.6	25.0	24.5	25.3 b
26.8	27.5	26.6	26.2	25.7	25.9	26.5 a
26.4	26.1	26.7	26.7	24.9	24.6	25.9 ab
						N.S.
						4
			Fiber length, 2.5-percent span (inches)			
1.09	1.07	1.01	1.07	1.04	1.09	1.06
1.10	1.07	1.06	1.05	1.10	1.09	1.07
1.05	1.04	1.11	1.07	1.08	1.09	1.07
1.08	1.07	1.09	1.11	1.12	1.03	1.08
1.02	1.08	1.05	1.12	1.11	1.05	1.07
						N.S.
						4
			Fiber uniformity (percent)			
48	47	44	47	46	48	47
47	46	46	46	48	49	47
46	45	49	47	48	48	47
47	48	48	49	51	45	48
46	48	47	49	49	46	47
						N.S.
						4
			Micronaire			
4.49	4.44	4.60	4.59	4.67	4.55	4.56 b
4.61	4.83	4.93	4.78	4.81	4.90	4.81 a
4.86	4.82	4.65	4.51	4.67	4.71	4.70 a
4.61	4.79	4.59	4.62	4.85	4.88	4.72 a
4.67	4.80	4.87	4.50	4.67	4.76	4.71 a
						N.S.
						3

according to Duncan's multiple range test. Means of columns

TABLE 37.--*Number and percent of true leaves with 2,4-D symptoms on Pima cotton seedlings before recovery from seed of 1974 chemical termination tests planted in the field in 1975 at Phoenix, Ariz.*

True leaves with 2,4-D symptoms (number)	Plants	
	Number	*Percent*
1	125	52
2	49	20
3	23	10
4	23	10
5	14	6
6	5	2
7	2	1
8	1	0.5
Total	242	

TABLE 38.--*Test 29: Effects of chemical termination treatments applied to DPL 61 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Floaters	Seed weight	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*
1. Check		1,046[1]	23,000 a	100	28 b	19	8.7	34.5
2. MCPA	0.033	1,142	2,000 b	2	32 b	35	8.9	34.1
3. TD-1123 + chlorflurenol	1.0 + 0.5	1,041	0 b	1	79 a	29	8.7	34.9
4. MCPA + chlormequat	.025 + 0.5	951	3,000 b	21	49 ab	31	8.5	34.3
5. MCPA + chlorflurenol	.025 + 0.5	1,034	1,000 b	5	56 ab	30	8.7	34.0
CV (percent)[2]		26	50	--	35	24	3	4

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.

[2]CV = coefficient of variation.

September 4, 1975, at Thermal, Calif., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Field Emergence	Time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
37.1	6.9	42	13.8	1.06	0.51	48	21.4	4.47
36.3	6.2	44	13.4	1.12	.55	49	20.7	4.19
37.2	6.1	45	13.5	1.08	.51	48	19.4	4.50
36.5	6.1	40	13.6	1.14	.56	49	20.1	4.12
36.6	7.0	53	13.7	1.07	.52	49	20.0	4.44
3	15	24	2	4	7	3	5	8

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 39.--*Test 30: Effects of chemical termination treatments applied to DPL 61 cotton on*

Treatment	Application rate	Lint yield 1st pick 12/1/75	Lint yield 2d pick 1/12/76	Lint yield Total	Immature bolls	DE index	Defoliation 11/18/75	Floaters	Seed weight
	Lb ai/acre	*Lb/acre*	*Lb/acre*	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*
1. Check		723[1]	166 a	889 a	123,000 a	100	43	18 ab	8.5
2. MCPA	0.033	716	48 b	764 ab	53,000 b	57	51	14 c	8.5
3. TD-1123 + chlorflurenol	1.0 + 0.5	659	23 b	682 b	40 c	23	73	19 a	8.5
4. MCPA + chlormequat	.025 + 0.5	655	27 b	679 b	5,000 c	27	58	17 abc	8.2
5. MCPA + chlorflurenol	.025 + 0.5	630	43 b	673 b	1,000 c	25	40	16 bc	8.7
CV (percent)[2]		11	34	12	23	--	32	11	3

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

TABLE 40.--*Test 31: Effects of chemical termination treatments applied to DPL 61 cotton on*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Floaters	Seed weight	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*
1. Check		1,388[1]	52,000 a	100	36 b	16	8.4	33.9
2. MCPA	0.033	1,351	7,000 b	16	30 b	17	8.8	33.0
3. TD-1123 + chlorflurenol	1.0 + 0.5	1,311	100 b	6	71 a	21	8.5	34.1
4. MCPA + chlormequat	.025 + 0.5	1,389	2,000 b	3	44 b	15	8.4	33.5
5. MCPA + chlorflurenol	.025 + 0.5	1,489	1,000 b	-5	23 b	18	8.6	33.2
CV (percent)[2]		5	60	--	42	23	3	3

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]CV = coefficient of variation.

September 4, 1975, at Brawley, Calif., on lint yield, immature bolls, seed, and fiber

Gin turnout	Lint	Trash	Field emergence	Time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
33.8	36.3	6.9	33	13.5	1.05	0.50	48	21.4	4.77
34.1	37.0	7.7	18	13.7	1.07	.52	48	21.3	4.90
34.1	36.9	7.6	27	13.6	1.03	.48	46	20.7	5.11
34.0	36.7	7.4	21	13.5	1.09	.53	49	21.5	4.94
33.5	36.7	8.8	34	13.4	1.03	.49	48	20.8	4.98
2	2	11	30	3	3	6	4	4	4

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

September 4, 1975, at Yuma, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Field emergence	Time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
37.5	9.4	32	13.8	1.06	0.49	47	20.6 a	4.98
37.0	10.8	28	13.7	1.03	.46	45	19.3 b	4.92
37.6	9.2	31	13.7	1.03	.45	44	18.3 b	4.92
37.0	9.3	34	13.6	1.03	.46	45	19.2 b	4.93
37.0	10.3	38	13.4	1.05	.48	46	19.4 b	4.95
2	13	32	3	3	7	4	3	2

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 41.--*Test 32: Effects of chemical termination treatments applied to DPL 61*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Floaters	Seed weight	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*
1. Check		1,169[2]	28,000 a	100	23 b	16	8.6	33.8 a
2. MCPA	0.033	989	28,000 a	115	19 b	18	8.6	32.6 b
3. TD-1123 + chlorflurenol	1.0 + 0.5	952	700 b	21	51 a	25	8.5	34.1 a
4. MCPA + chlormequat	.025 + 0.5	926	9,000 b	51	29 ab	20	8.7	32.7 b
5. MCPA + chlorflurenol	.025 + 0.5	949	7,000 b	43	15 b	24	8.3	32.5 b
CV (percent)[3]		12	45	--	56	23	2	2

[1]MCPA treatments were applied August 26, TD-1123 treatment was applied September 10.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

TABLE 42.--*Test 33: Effects of chemical termination treatments applied to AZ 64*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Floaters	Seed weight	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*
1. Check		892 a[2]	24,000 ab	100	53	4 c	10.2 ab	33.1 a
2. MCPA	0.033	596 b	32,000 a	167	44	4 c	10.5 a	32.2 b
3. TD-1123 + chlorflurenol	1.0 + 0.5	462 c	3,000 c	61	69	20 a	10.5 a	31.9 bc
4. MCPA + chlormequat	.025 + 0.5	638 b	21,000 b	117	40	5 c	10.7 a	31.1 d
5. MCPA + chlorflurenol	.025 + 0.5	515 c	9,000 c	78	43	10 b	9.7 b	31.3 cd
CV (percent)[3]		7	36	--	31	33	3	1

[1]MCPA treatments were applied August 26, TD-1123 treatment was applied September 10.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

cotton at Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Field emergence	Time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
38.4 a	11.9 bc	15	13.7	1.03	0.47	46	18.6	4.98
38.3 a	14.9 a	13	13.9	1.01	.46	46	18.6	4.96
38.1 a	10.5 c	17	13.5	1.04	.47	45	18.6	4.67
37.4 b	12.4 abc	22	13.6	1.06	.49	46	18.9	4.75
37.9 a	14.4 ab	23	14.2	1.02	.45	45	18.5	4.81
1	13	43	4	2	4	2	3	4

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

cotton at Phoenix, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Field emergence	Time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
38.8	14.7 b	46 a	13.8	1.01	0.48	48	19.2 bc	4.54 a
39.0	17.5 a	22 b	14.1	.99	.46	47	20.1 ab	4.20 ab
38.9	17.9 a	40 a	13.8	1.04	.49	47	20.4 a	3.88 c
38.1	18.2 a	47 a	13.6	1.01	.47	47	20.1 ab	4.31 ab
38.5	18.6 a	50 a	13.5	.98	.45	46	18.6 c	4.00 bc
1	9	22	3	4	5	3	3	6

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 43.--*Test 34: Effects of chemical termination treatments applied to Pima S-4*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Floaters	Seed weight	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*
1. Check		733 a[2]	65,000 a	100	33	9 b	12.0 bc	34.7
2. MCPA	0.033	568 b	44,000 a	91	36	7 b	12.4 ab	34.5
3. TD-1123 + chlorflurenol	1.0 + 0.5	532 b	19,000 b	57	73	14 a	12.1 bc	34.8
4. MCPA + chlormequat	.025 + 0.5	461 c	14,000 b	58	43	8 b	12.6 a	34.3
5. MCPA + chlorflurenol	.025 + 0.5	576 b	19,000 b	51	58	11 ab	11.8 c	34.0
CV (percent)[3]		6	37	--	40	26	2	1

[1]MCPA treatments were applied August 26, TD-1123 treatment was applied September 10.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

TABLE 44.--*Test 35: Effects of chemical termination treatments applied to DPL 61 cotton*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout	Lint	Trash
	Lb/ai acre	*Lb/acre*	*No./acre*		*G/100 seed*	*Percent*	*Percent*	*Percent*	*Percent*
1. Check		804[2]	4,300 a	100	9.7	17	34.2	35.6	4.0
2. MCPA	0.033	689	3,300 a	92	9.6	23	34.5	35.3	2.5
3. TD-1123 + chlorflurenol	1.0 + 0.5	723	0 b	10	9.6	18	33.0	35.7	7.8
4. MCPA + chlormequat	.025 + 0.5	703	100 b	15	9.8	14	32.8	34.9	6.3
5. MCPA + chlorflurenol	.025 + 0.5	671	40 b	17	9.6	19	32.4	34.8	6.9
CV (percent)[3]		16	119	--	1	23	9	2	126

[1]MCPA treatments were applied August 25, TD-1123 treatment was applied September 8.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

cotton at Phoenix, Ariz., on lint yield, immature bolls, and several indices of seed and fiber quality

Lint	Trash	Field emergence	Time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
36.3	4.5	38 b	13.7	1.38 a	0.69	50	30.6 a	3.61 b
36.7	5.9	50 a	13.6	1.40 a	.69	49	29.5 bc	3.85 a
36.1	3.6	38 b	13.5	1.34 b	.67	50	29.8 b	3.62 b
35.9	4.4	44 ab	13.7	1.38 a	.67	49	29.1 c	3.87 a
35.7	4.6	32 b	14.3	1.34 b	.65	49	29.9 b	3.70 ab
2	29	18	2	1	4	3	1	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

at Marana, Ariz., in 1975 on lint yield, immature bolls, seed, fiber, and pink bollworm

Field emergence	Average time to emerge	Fiber length: 2.5-percent span	Fiber length: 50-percent span	Fiber uniformity	Fiber strength	Micronaire	Pink bollworm: Immature bolls 11/7/75		Pink bollworm: Larvae in soil and trash 12/10/75
Percent	*Days*	*Inches*	*Inch*	*Percent*	T_1		*Percent infested*	*Larvae/boll*	*No./acre*
35	13.8	1.15	0.54	47	18.5	3.99	70 a	1.4 a	37,692 a
28	13.1	1.17	.56	48	17.8	3.77	61 a	1.0 ab	--
26	13.9	1.17	.55	47	18.3	3.99	0 b	0 c	6,461 b
30	13.7	1.14	.53	46	18.1	4.14	6 b	.3 bc	--
37	13.8	1.16	.54	47	17.9	3.91	38 ab	.6 abc	5,385 b
46	4	2	6	4	3	5	52	81	150

according to Duncan's multipLe range test. Means of columns having a CV, but no letters, are not

TABLE 45.--*Test 36: Effects of chemical termination treatments applied to Pima S-4*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Seed weight	Floaters	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*G/100 seed*	*Percent*	*Percent*
1. Check		500[2]	60,000 a	100	13.3 a	26	36.1
2. MCPA	0.033	437	30,000 b	61	13.0 ab	25	36.1
3. TD-1123 + chlorflurenol	1.0 + 0.5	457	41,000 b	77	13.3 a	22	35.7
4. MCPA + chlormequat	.025 + 0.5	421	9,000 c	31	12.8 b	27	36.8
5. MCPA + chlorflurenol	.025 + 0.5	399	33,000 b	75	13.1 ab	25	35.9
CV (percent)[3]		14	21	--	1	15	2

[1]MCPA treatments were applied August 25, TD-1123 treatment was applied September 8.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, signficantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

TABLE 46.--*Mean lint yield, immature bolls at harvest, defoliation, and certain indices*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Floaters	Seed weight	Gin turnout
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*G/100 seed*	*Percent*
1. Check		928 a[1]	48,443 a	100	36 b	16 c	9.9	34.3 a
2. MCPA	0.033	821 b	25,523 b	64	35 b	18 bc	10.0	33.9 ab
3. TD-1123 + chlorflurenol	1.0 + 0.5	770 b	8,637 c	35	69 a	21 a	10.0	34.1 a
4. MCPA + chlormequat	.025 + 0.5	771 b	7,933 c	33	44 b	17 bc	10.0	33.7 ab
5. MCPA + chlorflurenol	.025 + 0.5	788 b	9,382 c	34	39 b	19 b	9.8	33.3 b
Test X treatment[2]		N.S.	**		N.S.	**	**	N.S.
CV (percent)[3]		15	34	--	38	23	2	4

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]N.S., *, ** = not significant, significant at the 5-percent level, and significant at the 1-percent
[3]CV = coefficient of variation.

cotton at Safford, Ariz., on lint yield, immature bolls, seed, and fiber

Lint	Trash	Field emergence	Time to emerge	Fiber length 2.5-percent span	Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Days*	*Percent*	*Percent*	*Inches*	*Inch*	*Percent*	T_1	
39.2 c	7.9	20	14.6	1.41	0.73	51	30.1 a	3.52
39.7 a	9.1	29	14.0	1.42	.70	50	29.7 a	3.41
38.8 c	8.0	23	14.8	1.40	.71	51	29.2 ab	3.47
39.7 ab	7.2	23	13.8	1.38	.69	50	28.7 b	3.55
39.2 bc	8.4	37	13.7	1.38	.70	51	29.9 a	3.42
1	18	40	4	2	4	2	2	3

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

of seed and fiber quality for 8 areawide chemical termination tests on cotton in 1975

Lint	Trash	Field emergence	Time to emerge	Fiber length 2.5-percent span	Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire
Percent	*Percent*	*Percent*	*Days*	*Inches*	*Inch*	*Percent*	T_1	
37.4 a	8.3	32 b	13.8	1.14 a	0.55	48	22.5	4.36
37.4 a	9.3	29 b	13.7	1.15 a	.55	48	22.1	4.28
37.4 a	8.8	31 b	13.8	1.14 ab	.54	47	21.8	4.27
37.0 b	8.9	32 b	13.7	1.15 a	.55	48	22.0	4.33
37.0 b	9.9	38 a	13.7	1.13 b	.54	47	21.9	4.27
N.S.	N.S.	N.S.	*	*	N.S.	N.S.	**	**
2	31	31	3	3	5	3	3	5

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not level, respectively, for the variety by treatment interaction.

TABLE 47.--*Test 37: Effects of 9 chemical termination treatments and a check on seed cotton yield,*

Treatment	Application rate	Treatment date	Seed cotton yield S-4 12/4	Seed cotton yield AZ 64 11/24	Seed cotton yield Mean
	Lb ai/acre		*Lb/acre*	*Lb/acre*	*Lb/acre*
1. Check		9/12[1]	2,507 a	2,875 a	2,691 a
2. TD-1123 + chlormequat	1.0 + 0.5	9/12	2,230 ab	2,287 cd	2,258 b
3. TD-1123 + MCPA + chlorflurenol	.5 + 0.0125 + 0.5	9/12	2,173 ab	2,271 cd	2,222 b
4. TD-1123 + BAS 08300	1.0 + 0.5	8/30	2,017 bc	2,091 de	2,054 b
5. MCPA + BAS 08300	.025 + 0.25	8/30	1,944 bc	2,222 cd	2,083 b
6. Do.	.025 + 0.5	8/30	1,911 bc	2,573 b	2,242 b
7. Do.	.025 + 1.0	8/30	1,764 c	2,442 bc	2,103 b
8. Dicamba	.033	8/30	2,295 ab	2,548 b	2,422 ab
9. Dicamba + chlorflurenol	.025 + 0.5	8/30	2,246 ab	2,328 c	2,287 b
10. Glyphosate	1.0	8/30	1,184 d	1,919 e	1,552 c
Variety X treatment[2]					**
CV (percent)[3]			8	4	6

TABLE 47.--Continued

Treatment	Gin turnout	Lint	Trash	Field emergence	Time to emerge
	Percent	*Percent*	*Percent*	*Percent*	*Days*
1. Check	34.3 ab	38.1	9.6 bc	39 bc	13.2
2. TD-1123 = chlormequat	34.0 ab	38.2	10.8 ab	58 a	13.5
3. TD-1123 + MCPA + chlorflurenol	33.5 b	37.6	10.7 ab	49 ab	13.2
4. TD-1123 + BAS 08300	34.5 a	37.6	8.0 c	49 ab	13.1
5. MCPA + BAS 08300	33.0 b	37.2	11.3 ab	57 ab	13.1
6. Do.	33.2 b	37.5	11.4 ab	57 ab	12.9
7. Do.	33.2 b	37.7	11.9 ab	55 ab	13.5
8. Dicamba	33.3 b	38.1	12.5 a	55 ab	13.0
9. Dicamba + chlorflurenol	33.5 ab	37.6	10.6 ab	53 ab	12.9
10. Glyphosate	33.5 b	37.3	10.0 bc	28 c	13.8
Variety X treatment[2]	N.S.	N.S.	N.S.	N.S.	N.S.
CV (percent)[3]	2	1	13	23	5

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.

[2]N.S., *, ** = not significant, significant at the 5-percent level, and significant at the 1-percent

[3]CV = coefficient of variation.

immature bolls at harvest, seed, and lint at the Cotton Research Center, Phoenix, Ariz., in 1975

Immature bolls			DE index			Defoliation		
S-4 12/4	AZ 64 11/25	Mean	S-4	AZ 64	Mean	11/20	Seed weight	Floaters
No./acre	*No./acre*	*No./acre*				*Percent*	*G/100 seed*	*Percent*
66,000 a	25,000 a	45,000 a	100	100	100	26 b	11.0 c	5 b
6,000 d	900 d	4,000 d	20	24	24	53 a	11.0 c	15 a
38,000 bc	1,600 d	20,000 bcd	70	28	61	54 a	11.1 bc	14 a
15,000 cd	1,500 d	8,000 cd	43	33	42	69 a	11.1 c	13 a
19,000 cd	19,000 ab	19,000 bcd	51	101	65	35 b	11.1 bc	7 b
26,000 bcd	17,000 ab	22,000 bcd	64	82	65	34 b	11.5 a	7 b
8,000 d	13,000 bc	11,000 cd	42	70	46	29 b	11.2 abc	7 b
47,000 ab	16,000 ab	32,000 ab	79	77	79	35 b	11.3 abc	7 b
46,000 ab	5,000 cd	26,000 bc	80	38	71	21 b	11.3 abc	6 b
34,000 bc	19,000 ab	26,000 abc	103	112	100	63 a	11.4 ab	17 a
		**				N.S.	N.S.	*
33	34	34	--	--	--	28	2	26

Fiber length				
2.5-percent span	50-percent span	Fiber uniformity	Fiber strength	Micronaire
Inches	*Inch*	*Percent*	T_1	
1.19 cd	0.58	49	26.3 ab	4.14
1.19 cd	.58	49	26.9 a	4.01
1.22 abc	.61	50	25.9 a-d	3.82
1.23 abc	.60	49	26.2 abc	3.94
1.25 a	.62	50	26.5 ab	4.01
1.23 ab	.61	49	26.3 abc	4.01
1.22 abc	.59	49	25.0 d	4.19
1.24 a	.62	50	26.6 a	4.21
1.20 bcd	.59	49	25.5 bcd	4.32
1.18 d	.57	48	25.3 cd	4.06
N.S.	N.S.	N.S.	N.S.	N.S.
2	4	2	2	5

according to Duncan's multiple range test. Means of having a CV, but no letters, are not

level, respectively, for the variety by treatment interaction.

TABLE 48.--*Test 38: Effects of rates of 2,4-D, MCPA, and Silvex, each mixed with chlorflurenol at 0.5 lb ai/acre, on lint yield, immature bolls, and certain seedcotton, seed, and fiber parameters of AZ 64 cotton treated on August 26, 1975, at Phoenix, Ariz.*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Defoliation	Gin turnout	Lint	Trash	Floaters
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
1. Check		842 a[1]	17,601	100	78 a	33.4 a	38.6 bc	13.6 a	8.1
2. 2,4-D	0.017	519 bc	1,674	48	14 cd	27.9 c	38.8 abc	28.0 c	10.2
3. Do.	.025	494 c	1,715	51	4 d	28.9 c	39.9 a	27.6 c	7.9
4. Do.	.033	480 c	735	47	3 d	28.5 c	39.4 ab	27.6 c	10.7
5. MCPA	.017	546 bc	10,291	91	57 ab	31.8 ab	38.5 bc	17.1 ab	8.6
6. Do.	.025	459 c	9,964	102	54 abc	31.5 ab	38.2 c	17.5 ab	9.5
7. Do.	.033	547 bc	3,063	53	64 ab	31.4 ab	37.9 c	17.2 ab	8.5
8. Silvex	.025	601 b	4,901	56	37 bcd	31.2 b	39.0 abc	20.0 b	8.5
CV (percent)[2]		11	185	--	64	4	2	15	

TABLE 48.--Continued

Treatment	Seed weight	Reflectance		Lint color		Trash[3]	Seedling emergence	
		Before	After	Before	After		Greenhouse	Field
	G/100 seed	*Rd*	*Rd*	*Hunters B*	*Hunters B*	*Percent*	*Percent*	*Percent*
1. Check	11.8	72.3 a	75.8	6.6	7.5	7.0 d	94 a	68 a
2. 2,4-D	11.6	66.4 bcd	74.4	6.3	7.8	15.4 ab	92 a	49 ab
3. Do.	11.9	64.2 cd	73.8	6.1	8.0	18.0 a	81 b	31 b
4. Do.	12.0	63.5 d	74.0	5.7	7.7	17.4 a	84 b	33 b
5. MCPA	11.9	69.9 ab	74.4	6.6	7.5	9.2 cd	94 a	66 a
6. Do.	11.7	68.6 abc	75.1	6.4	8.0	10.6 bcd	98 a	59 a
7. Do.	11.3	70.4 ab	74.6	6.5	7.7	8.6 cd	97 a	68 a
8. Silvex	11.5	67.4 bcd	74.3	6.3	7.7	13.0 abc	95 a	61 a
CV (percent)[2]	4	4	1	7	4	27	6	24

TABLE 48.--Continued

Treatment	Average time to emerge		Greenhouse seedlings with 2,4-D symptoms	Fiber length		Fiber uniformity	Fiber strength	Micronaire
	Greenhouse	Field		2.5-percent span	50-percent span			
	Days	*Days*		*Inches*	*Inch*	*Percent*	T_1	
1. Check	4.5 c	12.7	1 c	1.05	0.51	49	20.3	3.98
2. 2,4-D	5.3 b	12.8	24 b	1.06	.52	49	21.0	3.77
3. Do.	6.6 a	12.7	29 ab	1.08	.54	50	21.3	3.94
4. Do.	7.1 a	13.3	35 a	1.07	.53	50	21.4	4.02
5. MCPA	4.4 c	12.6	2 c	1.04	.49	48	21.2	3.99
6. Do.	4.5 c	12.9	2 c	1.01	.47	47	20.5	4.12
7. Do.	4.3 c	12.6	1 c	.99	.47	48	20.1	4.10
8. Silvex	4.5 c	12.8	1 c	1.04	.50	49	20.7	4.00
CV (percent)[2]	9	3	47	4	7	3	4	8

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not significantly different at the 5-percent level by the F test.

[2]CV = coefficient of variation.

[3]Trash removed by Shirley Analyzer after laboratory cleaning.

TABLE 49.--*Test 39: Lint yield, immature bolls, and certain seed and fiber quality parameters of AZ 64 cotton treated with 4 rates of TD-1123 plus chlorflurenol at 0.5 lb ai/acre on September 10, 1975*

Treatment	Application rate	Lint yield	Immature bolls	DE index	Gin turnout	Lint	Trash
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*	*Percent*	*Percent*
1. Check		1,087 a[1]	7,300 a	100	35.6	39.5	9.9
2. TD-1123 + chlorflurenol	0.5 + 0.5	880 b	1,300 b	37	34.7	38.6	10.2
3. Do.	.75 + 0.5	840 bc	1,300 b	41	35.3	39.3	10.2
4. Do.	1.0 + 0.5	837 bc	300 b	27	34.6	38.7	10.6
5. Do.	1.25 + 0.5	810 c	900 b	38	35.6	39.2	9.2
CV (percent)[2]		5	87	--	2	1	11

TABLE 49.--Continued

Treatment	Seed weight	Floaters	Emergence		Time to emerge	
			Greenhouse	Field	Greenhouse	Field
	G/100 seed	*Percent*	*Percent*	*Percent*	*Days*	*Days*
1. Check	10.7	5 b	97	45	4.9	13.4
2. TD-1123 + chlorflurenol	10.8	9 a	97	53	5.0	13.2
3. Do.	10.7	8 ab	97	52	5.0	13.5
4. Do.	11.2	9 a	98	40	4.7	13.4
5. Do.	11.2	11 a	98	51	5.1	13.2
CV (percent)[2]	5	25	2	30	5	4

TABLE 49.--Continued

Treatment	Fiber length		Fiber uniformity	Fiber strength	Micronaire
	2.5-percent span	50-percent span			
	Inches	*Inch*	*Percent*	T_1	
1. Check	1.11	0.56	51	21.0 c	4.18
2. TD-1123 + chlorflurenol	1.10	.56	51	21.6 ab	3.89
3. Do.	1.12	.56	50	21.9 a	3.98
4. Do.	1.12	.57	51	21.4 abc	3.91
5. Do.	1.11	.56	50	21.4 bc	3.79
CV (percent)[2]	2	4	2	1	6

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not significantly different at the 5-percent level by the F test.

[2]CV = coefficient of variation.

TABLE 50.--*Test 40: Effects of several rates of chlorflurenol and chlormequat with MCPA for chemical termination of AZ 64 cotton applied August 29, 1975, at Phoenix, Ariz., on lint yield, immature bolls, defoliation, seed, and fiber*

Treatment	Application rate	Seed cotton	Immature bolls	DE index	Defoliation
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*
Check		2,842 a[1]	34,671 a	100	12
Chlorflurenol + MCPA	0.125 + 0.025	2,458 b	14,579 bc	56	13
Do.	.25 + .025	2,299 bcd	14,620 bc	61	9
Do.	.5 + .025	2,271 bcd	9,842 bc	49	9
Do.	1.0 + .025	1,895 ef	11,108 bc	65	7
Do.	2.0 + .025	1,776 f	8,331 bc	62	9
Chlormequat + MCPA	.125 + .025	2,430 bc	17,560 bc	65	13
Do.	.25 + .025	2,381 bcd	15,028 bc	60	11
Do.	.5 + .025	2,377 bcd	19,479 b	73	6
Do.	1.0 + .025	2,124 de	6,085 c	43	9
Do.	2.0 + .025	2,140 cde	4,655 c	38	9
CV (percent)[2]		8	51	--	45

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not significantly different at the 5-percent level by the F test.

[2]CV = Coefficient of variation.

TABLE 51.--*Test 41: Lint yield and several indices of seed and fiber quality from a single plot of AZ 64 cotton at Phoenix, Ariz., treated with TD-1123 at 0.75 lb ai/acre on September 11, 1975, and a single check plot, both picked at weekly intervals*

Harvest date	Weekly			Cumulative		
	Check	Treated	Difference	Check	Treated	Difference
	Lb/acre			*Lb/acre*		
Sept. 11	49	64	- 15	49	64	- 15
18	48	67	- 19	97	131	- 34
25	40	72	- 32	138	203	- 65
Oct. 2	39	82	- 43	177	285	-108
9	72	111	- 39	249	396	-147
17	128	192	- 64	376	588	-212
23	142	180	- 38	518	768	-250
30	159	106	53	677	874	-197
Nov. 6	205	89	116	882	963	- 81
13	99	34	65	980	997	- 17
20	83	8	75	1,063	1,005	58
Dec. 4	57	9	48	1,120	1,014	106

TABLE 51.--*Test 41: Lint yield and several indices of seed and fiber quality from a single plot of AZ 64 cotton at Phoenix, Ariz., treated with TD-1123 at 0.75 lb ai/acre on September 11, 1975, and a single check plot, both picked at weekly intervals*--Continued

Harvest date	Seed weight			Floaters		
	Check	Treated	Difference	Check	Treated	Difference
	G/100 seed			*Percent*		
Sept. 11	11.91	12.03	-0.12	11	4	7
18	11.65	11.83	- .18	3	4	- 1
25	11.36	11.19	.17	9	7	2
Oct. 2	11.54	11.27	.27	2	5	- 3
9	11.44	11.40	.04	4	5	- 1
17	10.87	11.23	- .36	2	6	- 4
23	10.45	10.31	.14	1	18	-17
30	10.45	9.98	.47	2	29	-27
Nov. 6	10.18	9.55	.63	3	38	-35
13	10.13	9.08	1.05	4	45	-41
20	10.11	8.77	1.34	1	34	-33
Dec. 4	10.22	10.02	.20	7	30	-23

TABLE 51.--Continued

Harvest date	Lint			Seedling emergence (greenhouse)		
	Check	Treated	Difference	Check	Treated	Difference
	Percent			*Percent*		
Sept. 11	41.1	42.0	-0.9	93	93	0
18	39.9	39.5	.4	99	93	6
25	39.7	40.4	- .7	94	92	2
Oct. 2	39.4	41.6	-2.2	96	98	-2
9	39.9	40.8	- .9	97	93	4
17	42.1	41.6	.5	89	97	-8
23	41.2	42.5	-1.3	75	77	- 2
30	42.5	43.8	-1.3	59	81	-22
Nov. 6	43.0	46.4	-3.4	51	40	11
13	42.9	46.5	-3.6	33	20	13
20	41.4	46.0	-4.6	19	22	- 3
Dec. 4	38.3	41.0	-2.7	9	25	-16

TABLE 51.--Continued

Harvest date	Seedling emergence (field)			Time to emerge (greenhouse)		
	Check	Treated	Difference	Check	Treated	Difference
	Percent			*Days*		
Sept. 11	71	59	12	5.4	5.5	-0.1
18	73	78	- 5	5.7	5.4	.3
25	67	77	-10	5.4	6.0	- .6
Oct. 2	44	49	- 5	6.0	5.8	.2
9	47	71	-24	5.3	5.5	- .2
17	39	67	-28	6.1	5.8	.3
23	50	44	6	6.0	6.0	0
30	57	60	- 3	8.0	8.6	- .6
Nov. 6	41	1	40	7.4	8.2	- .8
13	29	11	18	7.2	6.9	.3
20	54	14	40	6.4	8.8	-2.4
Dec. 4	43	18	25	9.2	5.6	3.6

TABLE 51.--*Test 41: Lint yield and several indices of seed and fiber quality from a single plot of AZ 64 cotton at Phoenix, Ariz., treated with TD-1123 at 0.75 lb ai/acre on September 11, 1975, and a single check plot, both picked at weekly intervals*--Continued

Harvest date	Time to emerge (field)			Fiber length (2.5-percent span)		
	Check	Treated	Difference	Check	Treated	Difference
	Days			*Inches*		
Sept. 11	12.5	12.5	0	1.12	1.12	0
18	12.6	12.3	.3	1.18	1.15	.03
25	12.2	12.5	- .3	1.16	1.15	.01
Oct. 2	12.4	12.3	.1	1.20	1.11	.09
9	12.9	12.6	.3	1.14	1.12	.02
17	12.9	12.2	.7	1.11	1.10	.01
23	12.6	12.6	0	1.13	1.07	.04
30	12.6	12.6	0	1.12	1.08	.04
Nov. 6	12.6	13.0	- .4	1.06	1.05	.01
13	12.4	13.1	- .7	1.09	1.03	.06
20	12.7	13.5	- .8	1.09	1.01	.08
Dec. 4	12.7	13.2	- .5	1.08	1.08	0

TABLE 51.--Continued

Harvest date	Fiber length (50-percent span)			Fiber uniformity		
	Check	Treated	Difference	Check	Treated	Difference
	Inch			*Percent*		
Sept. 11	0.57	0.57	0	51	51	0
18	.63	.57	.06	53	50	3.8
25	.58	.58	0	50	50	- .4
Oct. 2	.64	.57	.07	53	51	1.9
9	.56	.56	0	49	50	- .9
17	.55	.54	.01	50	49	.4
23	.57	.52	.05	50	49	1.8
30	.56	.52	.04	50	48	1.9
Nov. 6	.51	.48	.03	48	46	2.4
13	.55	.49	.06	51	48	2.9
20	.54	.47	.07	50	47	3.0
Dec. 4	.51	.52	- .01	47	48	- .9

TABLE 51.--Continued

Harvest date	Fiber strength			Micronaire		
	Check	Treated	Difference	Check	Treated	Difference
	T_1					
Sept. 11	22.2	21.3	0.9	5.03	4.85	0.18
18	21.8	22.6	- .8	4.75	4.60	.15
25	20.5	21.9	-1.4	4.56	4.69	- .13
Oct. 2	21.8	21.2	.6	4.40	4.47	- .07
9	21.5	20.0	1.5	4.11	4.25	- .14
17	20.9	20.7	.2	4.34	4.20	.14
23	21.9	22.0	- .1	4.19	3.74	.45
30	21.6	22.3	- .7	4.08	3.36	.72
Nov. 6	21.3	21.6	- .3	4.14	3.14	1.00
13	20.8	22.1	-1.3	4.21	3.52	.69
20	21.4	20.1	1.3	3.91	3.19	.72
Dec. 4	20.5	20.9	- .4	3.12	3.69	- .57

APPENDIX TABLES CONTINUE ON PAGE 96

TABLE 52.--*Test 42. Effects of 5 chemical treatments applied*

Treatment	Application rate	Lint yield for the following treatment dates-- Aug. 11	Aug. 17	Aug. 24	Aug. 27	Sept. 2	Sept. 11	Mean
	Lb ai/acre	*Lb/acre*						
Check		909 abc[1]	956 a	937 a	886 abc	885 abc	919 ab	915 a
MCPA	0.033	298 op	640 f-i	563 h-l	633 g-j	755 def	802 cd	615 b
TD-1123 + chlorflurenol	1.0 + 0.5	144 q	170 q	252 opq	337 no	528 j-m	607 h-k	339 d
MCPA + chlormequat	.025 + .5	294 op	510 klm	607 h-k	650 f-i	773 de	732 d-g	594 b
MCPA + chlorflurenol	.025 + .5	256 opq	678 e-h	558 i-l	593 h-l	654 f-i	815 bcd	592 b
Chlorflurenol	1.0	200 pq	420 mn	481 lm	622 g-k	671 e-i	750 def	524 c
Date X treatment[2]								**
CV (percent)[3]								10

TABLE 52.--Continued

Treatment	Application rate	DE index Aug. 11	Aug. 17	Aug. 24	Aug. 27	Sept. 2	Sept. 11	Mean
	Lb ai/acre							
Check		100	100	100	100	100	100	100
MCPA	0.033	438	192	137	134	141	95	190
TD-1123 + chlorflurenol	1.0 + 0.5	88	82	75	66	53	40	67
MCPA + chlormequat	.025 + .5	302	93	81	98	86	60	118
MCPA + chlorflurenol	.025 + .5	78	57	61	72	164	157	87
Chlorflurenol	1.0	79	62	71	80	139	174	88
Date X treatment[2]								--
CV (percent)[3]								--

See footnotes at end of table.

on 6 dates to AZ 64 cotton at Phoenix, Ariz., in 1975

Immature bolls per acre for the following treatment dates--						
Aug. 11	Aug. 17	Aug. 24	Aug. 27	Sept. 2	Sept. 11	Mean
No./acre						
29,000 c-h	38,000 c	37,000 c	32,000 c-g	19,000 e-k	24,000 c-j	30,000 b
107,000 a	60,000 b	36,000 c-d	34,000 c-f	24,000 c-j	20,000 d-j	47,000 a
1,000 lmn	100 n	700 mn	1,000 lmn	2,000 k-n	1,000 lmn	1,000 e
68,000 b	18,000 f-l	17,000 g-n	23,000 c-j	14,000 h-n	9,000 i-n	25,000 c
2,000 lmn	10,000 i-n	8,000 jkl	13,000 h-n	26,000 c-i	35,000 cde	16,000 d
200 n	2,000 k-n	8,000 j-n	16,000 g-n	17,000 g-m	37,000 c	13,000 d
						**
						39

Percent defoliation at 12 days							
Aug. 11	Aug. 17	Aug. 24	Aug. 27	Sept. 2	Sept. 11	Mean	Seed weight
							G/100 seed
36 c-g	24 efg	21 efg	24 ef	51 a-e	56 a-d	36 b	11.2
37 c-g	14 f-g	41 b-f	16 fg	37 c-g	16 fg	27 c	11.2
71 a	61 abc	48 a-e	43 a-f	68 ab	70 a	60 a	11.4
27 d-g	6 g	20 efg	12 fg	40 b-f	19 efg	21 c	11.2
29 d-g	16 fg	19 efg	23 efg	33 c-g	20 efg	23 c	11.1
36 c-g	24 efg	28 d-g	13 fg	34 c-g	19 fg	26 c	10.8
						N.S.	N.S.
						40	4

TABLE 52.--*Test 42: Effects of 5 chemical treatments applied*

Treatment	Application rate	Floaters	Gin turnout	Lint	Trash	Emergence (field)
	Lb ai/acre			*Percent*		
Check		3.7 c	33.6 a	39.6	15.2 c	87
MCPA	0.033	4.9 c	32.9 a	39.7	17.1 bc	84
TD-1123 + chlorflurenol	1.0 + 0.5	15.4 a	32.7 ab	39.5	17.0 bc	85
MCPA + chlormequat	.025 + .5	5.9 ab	31.9 bc	39.1	18.3 ab	88
MCPA + chlorflurenol	.025 + .5	7.7 b	31.8 c	39.6	19.6 a	87
Chlorflurenol	1.0	7.8 b	31.7 c	39.5	19.8 a	86
Date X treatment[2]		N.S.	N.S.	N.S.	*	N.S.
CV (percent)[3]		35	3	1	12	8

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[2]N.S., *, ** = not significant, significant at the 5-percent level, and significant at the 1-percent
[3]CV = coefficient of variation.

TABLE 53.--*Test 42: Flowers, mature bolls, and immature bolls from 160 feet of row of AZ 64 immature bolls were counted*

Julian date	Check			MCPA + chlorflurenol[1]			TD-1123 + chlorflurenol[1]		
	Flowers	Mature bolls	Immature bolls	Flowers	Mature bolls	Immature bolls	Flowers	Mature bolls	Immature bolls
220	110	18		117	12		107	16	
3	207	53		206	37		175	11	
4	181	49	2	186	32		163	4	
5	232	61	1	245	43		211	1	
6	204	54	1	207	45		224	2	
7	217	78		214	67		212	2	
232	122	33		132	38		96		
3	132	30	1	94	31		81		
4	169	44		167	44		115		
7	108	44		125	38	1	62		
8	167	82	1	179	58	2	105		
9	185	71	6	175	68	3	84		
240	130	62	4	161	64	2	67		
1	177	86	4	225	98	6	99	2	
5	145	55	9	188	89	16	15	1	
6	159	27	7	183	65	17	11		
251	157	36	17	128	17	14	1		
2	145	19	17	98	13	10	0		
3	101	12	14	66	5	5	0		
4	124	13	20	74	2	6	0		
5	112	13	21	67	2	6	0		
8	105	2	28	44		2	2		
9	103	1	21	52			0		
260	85	2	19	34			1		
1	56		13	34		1	1		

[1]Treated Aug. 17; Julian date = 230.

on 6 dates to AZ 64 cotton at Phoenix, Ariz., in 1975-Continued

Average time to emerge	Fiber length		Fiber uniformity	Fiber strength	Micronaire
	2.5-percent span	50-percent span			
Days	*Inches*		*Percent*	T_1	
7.7	1.09 ab	0.54 ab	50	22.4 ab	4.17
7.8	1.07 b	.57 bc	49	22.1 b	4.15
7.7	1.11 a	.55 a	49	22.5 ab	3.97
8.0	1.09 ab	.54 ab	50	22.7 a	4.17
7.9	1.04 c	.51 c	49	21.5 c	4.16
7.6	1.08 ab	.53 ab	49	22.0 bc	4.15
N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5	3	5	2	3	4

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

level, respectively, for the date by treatment interaction.

cotton by flowering date for 2 chemical termination treatments and a check at Phoenix, Ariz. on November 20, 1975 (324)

Julian date	Check			MCPA + chlorflurenol[1]			TD-1123 + chlorflurenol[1]		
	Flowers	Mature bolls	Immature bolls	Flowers	Mature bolls	Immature bolls	Flowers	Mature bolls	Immature bolls
262	92	3	12	34		3	0		
5	83	3	20	40		4	1		
6	80		27	16		5	0		
7	45		22	39		3	5		
8	78		27	16		3	1		
9	47		14	10			2		
272	39		5	10		1	3		
3	22	1	4	16			8		
4	41		3	11			6		
5	20		1	11			4		
6	23		2	14		1	5		
9	9		3	15		4	15		
280	3			8		2	6		
1	5		2	3			4		
2	1			12		1	8		
3	7		2	7		2	1		
7	8		2	14		2	8		
8	4			8			5		
9	2			2			8		
290	1			7		1	12		
3	3			12		3	7		
4	2		1	3			16		
5	3			3		2	19		
6	1			20			24		
7	0			14			32		

TABLE 54.--*Test 43: Effects of chemical termination treatments*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Defoliation
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*
Check		1,315[2]	22,951 a	100	33 b
TD-1123 + chlormequat	1.0 + 0.5	1,262	3,839 b	21	74 a
TD-1123 + chlorflurenol	1.0 + .5	1,339	1,797 b	6	71 a
2,4-D + chlormequat	.025 + .5	1,280	1,511 b	9	33 b
MCPA + chlormequat	.05 + .5	1,229	2,654 b	18	31 b
CV (percent)[3]		5	36	--	27

TABLE 54.--Continued

Treatment[1]	Application rate	Dead seedlings	Fiber length	
			2.5-percent span	50-percent span
	Lb ai/acre	*No./100 seed*	*Inches*	*Inch*
Check		1	1.10	0.53
TD-1123 + chlormequat	1.0 + 0.5	0	1.10	.53
TD-1123 + chlorflurenol	1.0 + .5	0	1.14	.55
2,4-D + chlormequat	.025 + .5	3	1.14	.55
MCPA + chlormequat	.05 + .5	2	1.12	.55
CV (percent)[3]		174	4	7

[1]MCPA and 2,4-D treatments applied August 30, 1976. TD-1123 treatments applied September 16.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

applied to DPL 61 cotton at Phoenix, Ariz., in 1976

Seed weight	Floaters	Gin turnout	Lint	Trash	Emergence (field)	Average time to emerge
G/100 seed	*Percent*	*Percent*	----------*Percent*----------			*Days*
8.9	25	33.7 a	37.7	10.5 bc	82 a	9.4
8.8	26	33.6 ab	37.1	9.5 c	86 a	9.3
8.9	25	33.6 ab	37.3	10.1 bc	87 a	9.7
8.9	25	32.7 c	37.3	12.2 a	53 b	10.4
8.9	28	32.9 bc	37.0	11.0 ab	80 a	10.1
2	23	1	1	9	13	6

Fiber uniformity	Fiber strength	Micronaire	Pink bollworm, Nov. 18		
			Bolls infested	Larvae	
Percent	T_1		*Percent*	*No./boll*	*No./acre*
48	20.4	4.24	71	1.6	30,709
48	21.4	4.28			
48	21.1	4.07	47	.7	895
48	21.5	4.07			
49	20.9	4.19	47	1.1	1,973
4	4	5			

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 55.--*Test 44: Effects of chemical termination treatments*

Treatment[1]	Application rate	Lint yield			Immature bolls	DE index
		1st pick	2d pick	Total		
	Lb ai/acre	----------*Lb/acre*----------			*No./acre*	
Check		886[2]	264 a	1,150	60,766 a	100
TD-1123 + chlormequat	1.0 + 0.5	939	121 c	1,098	12,782 b	26
TD-1123 + chlorflurenol	1.0 + .5	1,078	107 c	1,185	8,576 b	17
2,4-D + chlormequat	.025 + .5	1,013	158 b	1,171	6,248 b	9
MCPA + chlormequat	.05 + .5	817	134 b	951	14,865 b	42
CV (percent)[3]		19	16	13	46	--

TABLE 55.--Continued

Treatment[1]	Application rate	Average time to emerge	Dead seedlings	Fiber length 2.5-percent span
	Lb ai/acre	*Days*	*No./100 seed*	*Inches*
Check		8.5 b	4	1.16
TD-1123 + chlormequat	1.0 + 0.5	8.5 b	4	1.10
TD-1123 + chlorflurenol	1.0 + .5	8.8 b	2	1.14
2,4-D + chlormequat	.025 + .5	11.1 a	3	1.16
MCPA + chlormequat	.05 + .5	8.7 b	3	1.13
CV (percent)[3]		6	62	3

[1]MCPA and 2,4-D treatments applied August 30, 1976. TD-1123 treatments applied September 16.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

applied to AZ 64 cotton at Phoenix, Ariz., in 1976

Defoliation	Seed weight	Floaters	Gin turnout	Lint	Trash	Emergence (field)
Percent	*G/100 seed*			*Percent*		
14 bc	10.8	14	34.2 ab	40.4	15.2	92 a
36 a	10.7	16	35.1 a	39.8	11.6	85 b
26 ab	10.8	12	35.5 a	40.1	11.3	87 ab
16 bc	10.7	12	35.1 a	40.1	12.4	48 c
10 c	10.7	15	33.4 b	39.0	14.4	91 ab
37	1	22	3	2	22	4

Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire	Pink bollworm, Nov. 18 Bolls infested	Pink bollworm, Nov. 18 Larvae	
Inch	*Percent*	T_1		*Percent*	*No./boll*	*No./acre*
0.59	51	22.5	4.20	52	1.3	76,966
.54	49	22.2	4.33			
.57	50	22.0	4.22	58	.5	2,786
.60	52	21.7	4.15			
.57	50	21.4	4.07	38	2.1	24,350
6	3	4	4			

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 56.--*Test 45: Effects of chemical termination treatments*

Treatment[1]	Application rate	Lint yield 1st pick	Lint yield 2d pick	Lint yield Total	Immature bolls	DE index
	Lb ai/acre	*Lb/acre*			*No./acre*	
Check		1,107[2]	310 a	1,417 a	128,638 a	100
TD-1123 + chlormequat	1.0 + 0.5	1,050	209 b	1,259 b	67,872 b	64
TD-1123 + chlorflurenol	1.0 + .5	1,054	237 b	1,290 b	77,550 b	69
2,4-D + chlormequat	.025 + .5	1,090	198 b	1,288 b	19,357 c	24
MCPA + chlormequat	.05 + .5	1,058	179 b	1,237 b	25,278 c	32
CV (percent)[3]		5	17	5	22	--

TABLE 56.--Continued

Treatment[1]	Application rate	Average time to emerge	Dead seedlings	Fiber length 2.5-percent span
	Lb ai/acre	*Days*	*No./100 seed*	*Inches*
Check		9.2	4	1.40
TD-1123 + chlormequat	1.0 + 0.5	9.2	4	1.41
TD-1123 + chlorflurenol	1.0 + .5	8.8	5	1.41
2,4-D + chlormequat	.025 + .5	9.5	5	1.41
MCPA + chlormequat	.05 + .5	9.3	5	1.39
CV (percent)[3]		4	57	1

[1]MCPA and 2,4-D treatments applied August 30, 1976. TD-1123 treatments applied September 16.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]CV = coefficient of variation.

applied to Pima S-5 cotton at Phoenix, Ariz., in 1976

Defoliation	Seed weight	Floaters	Gin turnout	Lint	Trash	Emergence (field)
Percent	*G/100 seed*			*Percent*		
28	13.0	20	33.7	36.9 a	8.5	90
51	12.9	21	33.1	36.2 b	8.7	86
45	13.0	19	33.4	36.2 b	7.8	86
20	12.9	18	33.8	37.1 a	8.9	79
31	12.8	20	33.3	36.6 ab	9.0	89
50	1	23	2	1	12	8

Fiber length 50-percent span	Fiber uniformity	Fiber strength	Micronaire	Pink bollworm, Nov. 18		
				Bolls infested	Larvae	
Inch	*Percent*	T_1		*Percent*	*No./boll*	*No./acre*
0.72	51	30.3	3.84	64	1.1	114,290
.71	51	30.4	3.68			
.71	50	30.1	3.62	38	.9	66,476
.72	51	30.3	3.83			
.71	51	30.0	3.67	26	.5	2,426
2	2	3	3			

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 57.--*Mean of effects of chemical termination*

Treatment[1]	Application rate	Lint yield	Immature bolls	DE index	Defoliation
	Lb ai/acre	*Lb/acre*	*No./acre*		*Percent*
Check		1,294 a[2]	69,288 a	100	25 b
TD-1123 + chlormequat	1.0 + 0.5	1,206 ab	28,164 b	47	54 a
TD-1123 + chlorflurenol	1.0 + .5	1,272 a	29,294 b	44	47 a
2,4-D + chlormequat	.025 + .5	1,247 a	9,039 c	17	23 b
MCPA + chlormequat	.05 + .5	1,139 b	14,266 c	33	24 b
Test X treatment[3]		N.S.	**	--	N.S.
CV (percent)[4]		8	34	--	38

TABLE 57.--Continued

Treatment[1]	Application rate	Dead seedlings	Fiber length	
			2.5-percent span	50-percent span
	Lb ai/acre	*No./100 seed*	*Inches*	*Inch*
Check		3	1.22	0.61
TD-1123 + chlormequat	1.0 + 0.5	3	1.20	.60
TD-1123 + chlorflurenol	1.0 + .5	2	1.23	.61
2,4-D + chlormequat	.025 + .5	3	1.23	.62
MCPA + chlormequat	.05 + .5	3	1.21	.61
Test X treatment[3]		N.S.	N.S.	N.S.
CV (percent)[4]		75	3	5

[1]MCPA and 2,4-D treatments applied August 30, 1976. TD-1123 treatments applied September 16.
[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.
[3]N.S., *, ** = not significant, significant at the 5-percent level, and significant at the 1-percent
[4]CV = coefficient of variation.

treatment for tests 43, 44, and 45

Seed weight	Floaters	Gin turnout	Lint	Trash	Emergence (field)	Average time to emerge
G/100 seed			*Percent*			*Days*
10.9	19	33.9	38.3 a	11.4	88 a	9.0 b
10.8	21	33.9	37.7 b	9.9	86 a	9.0 b
10.9	19	34.2	37.9 ab	9.7	86 a	9.0 b
10.8	19	33.9	38.2 a	11.2	60 b	10.3 a
10.8	21	33.2	37.6 b	11.5	86 a	9.3 b
N.S.	N.S.	**	N.S.	N.S.	**	**
2	24	2	1	17	9	5

Fiber uniformity	Fiber strength	Micronaire	Pink bollworm, Nov. 18		
			Bolls infested	Larvae	
Percent	T_1		*Percent*	*No./boll*	*No./acre*
50	24.4	4.09	61 a	1.3	54,606 a
49	24.7	4.09			
49	24.4	3.97	39 b	.7	11,022 b
50	24.5	4.02			
50	24.1	3.98	47 ab	1.2	9,837 b
N.S.	N.S.	N.S.	N.S.	*	*
3	3	4	40	53	78

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not level, respectively, for the test by treatment interaction.

TABLE 58.--*Test 46: Effects of new chemical termination treatments*

Treatment[1]	Application rate	Lint yield (AZ 64) 1st pick	2d pick	Total
	Lb ai/acre	----------*Lb/acre*----------		
Check		1,111[2]	173 a	1,284
Dicamba + chlormequat	0.05 + 0.5	1,184	130 abc	1,314
Velsicol 4207 + chlormequat	.05 + .5	1,192	74 c	1,266
Cytex	.0008[3]	1,209	150 ab	1,359
Nor-Am 49537	.05	1,274	123 abc	1,397
TD-1123 + 2,4-D + chlormequat	.33 + .025 + 0.5	1,192	61 c	1,254
Glyphosate + chlormequat	.5 + .5	1,013	118 abc	1,130
Test X treatment[4]				
CV (percent)[5]		14	33	10

TABLE 58.--Continued

Treatment[1]	Application rate	DE index AZ 64	S-5	Mean
	Lb ai/acre			
Check		100	100	100
Dicamba + chlormequat	0.05 + 0.5	11	39	27
Velsicol 4207 + chlormequat	.05 + .5	2	48	35
Cytex	.0008[3]	95	98	93
Nor-Am 49537	.05	42	44	36
TD-1123 + 2,4-D + chlormequat	.33 + .025 + 0.5	4	34	23
Glyphosate + chlormequat	.5 + .5	85	36	43
Test X treatment[4]				--
CV (percent)[5]				--

See footnotes at end of table.

applied to AZ 64 and Pima S-5 cotton at Phoenix, Ariz., in 1976

Lint yield (Pima S-5)			2-cultivar	Immature bolls		
1st pick	2d pick	Total	lint yield	AZ 64	S-5	Mean
Lb/acre				*No./acre*		
1,299	312 a	1,611	1,447	33,405 de	132,804 a	83,104 a
1,054	128 cd	1,182	1,248	4,574 gh	16,988 d-h	10,781 c
1,094	213 b	1,308	1,287	327 h	38,551 d	19,439 c
1,111	303 a	1,414	1,386	33,813 de	114,100 b	73,957 a
1,135	136 cd	1,272	1,334	17,070 d-h	30,465 def	23,767 bc
1,111	109 cd	1,220	1,237	408 h	13,231 e-h	6,820 c
1,160	80 d	1,240	1,185	24,503 d-g	17,397 d-h	20,950 c
						**
11	33	10	10			43

Defoliation	Seed weight	Floaters	Gin turnout	Lint	Trash	Emergence (field)	Average time to emerge
Percent	*G/100 seed*	*Percent*					*Days*
37	11.9	16	34.3	38.4	10.2 abc	82 a-d	8.7
46	11.8	21	34.8	38.3	9.0 bc	71 de	9.6
35	11.9	17	34.0	37.6	10.3 abc	67 e	8.7
34	11.7	17	34.5	38.5	10.1 abc	85 ab	9.0
61	11.8	20	34.7	37.9	8.4 c	91 a	9.4
41	11.7	17	34.5	37.8	8.7 c	74 cde	8.6
53	11.7	17	34.0	37.9	10.2 abc	54 f	10.7
N.S.	N.S.	N.S.	*	N.S.	N.S.	N.S.	N.S.
31	1	20	1	2	12	9	12

TABLE 58.--*Test 46: Effects of new chemical termination treatments*

Treatment[1]	Application rate	Dead seedlings	Fiber length	
			2.5-percent span	50-percent span
	Lb ai/acre	*No./100 seed*	*Inches*	*Inch*
Check		5[2]	1.25	0.63
Dicamba + chlormequat	0.05 + 0.5	7	1.25	.61
Velsicol 4207 + chlormequat	.05 + .5	6	1.27	.64
Cytex	.00083[3]	4	1.28	.65
Nor-Am 49537	.05	3	1.29	.66
TD-1123 + 2,4-D + chlormequat	.33 + .025 + 0.5	9	1.25	.63
Glyphosate + chlormequat	.5 + .5	2	1.26	.65
Test X treatment[4]		N.S.	N.S.	N.S.
CV (percent)[5]		73	3	5

[1]TD-1123 of treatment 8 applied August 23, the rest of the treatment was applied September 2. Treatment 7 was applied September 16.

[2]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.

[3]Cytokinin equivalent by bioassay.

[4]N.S., *, ** = not significant, significant at the 5-percent level, and significant at the 1-percent

[5]CV = coefficient of variation.

applied to AZ 64 and Pima S-5 cotton at Phoenix, Ariz., in 1976-Continued

Fiber uniformity	Fiber strength	Micronaire	Pink bollworms, Nov. 18		
			Bolls infested	Larvae	
Percent	T_1		*Percent*	*No./boll*	*No./acre*
50	25.4	4.09	60 a	1.2 a	46,427 a
49	24.8	3.97	32 ab	.3 b	969 b
51	25.4	4.00	23 ab	.3 b	2,599 b
51	25.2	4.00	--	--	--
51	25.4	3.97	--	--	--
50	25.3	3.94	24 b	.2 b	104 b
51	24.9	3.92	--	--	--
N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3	3	4	51	550	143

Treatments 2, 3, and 6 were applied August 31. Treatments 4, 5, and 9 were applied September 1.

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

level, respectively, for the test by treatment interaction.

TABLE 59.--*Test 47: Effects of 3 MCPA rates for chemical termination*

Treatment	Application rates	Lint yield			Immature bolls
		1st pick	2d pick	Total	
	Lb ai/acre	----------*Lb/acre*----------			*No./acre*
Check		715[1]	261 a	976	58,030 a
MCPA + chlormequat	0.025 + 0.5	772	172 b	944	31,322 b
Do.	.050 + .5	800	145 bc	945	24,176 b
Do.	.100 + .5	719	119 c	837	12,333 c
2,4-D + chlormequat	.025 + .5	760	148 bc	907	8,127 c
CV (percent)[2]		12	13	10	20

TABLE 59.--Continued

Treatment	Application rates	Emergence (field)	Average time to emerge	Dead seedlings
	Lb ai/acre	----*Percent*-----	*Days*	*No./100 seed*
Check		83 a	8.7	6
MCPA + chlormequat	0.025 + 0.5	82 a	8.1	7
Do.	.050 + .5	82 a	9.0	1
Do.	.100 + .5	82 a	8.8	5
2,4-D + chlormequat	.025 + .5	48 b	10.0	3
CV (percent)[2]		9	10	96

[1]Means within a column followed by the same letter do not differ significantly at the 5-percent level, significantly different at the 5-percent level by the F test.

[2]CV = coefficient of variation.

of AZ 64 cotton at Phoenix, Ariz., on August 30, 1976

DE index	Defoliation	Seed weight	Floaters	Gin turnout	Lint	Trash
	Percent	*G/100 seed*	*Percent*			
100	23	10.8	16	34.3	40.5	15.2
57	26	10.6	12	34.4	40.1	14.2
45	26	10.7	15	34.8	40.4	13.9
36	24	10.7	19	34.7	40.2	13.6
22	21	10.8	14	33.9	39.7	14.6
--	23	1	22	2	2	16

Fiber length		Fiber uniformity	Fiber strength	Micronaire
2.5-percent span	50-percent span			
Inches	*Inch*	*Percent*	T_1	
1.15	0.58	50	20.9	3.96
1.16	.60	51	20.8	3.90
1.14	.58	51	21.1	3.87
1.11	.56	50	20.5	3.92
1.14	.57	50	21.4	3.99
2	4	3	3	4

according to Duncan's multiple range test. Means of columns having a CV, but no letters, are not

TABLE 60.--*Test 48: Effects of 4 rates of TD-1123 with of DPL 61 cotton at Phoenix, Ariz.,*

Treatment	Application rate	Lint yield	Immature bolls	DE index
	Lb ai/acre	*Lb/acre*	*No./acre*	
Check		1,221[1]	19,173 a	100
TD-1123 + chlorflurenol	0.5 + 0.5	1,131	3,675 b	27
Do.	.75 + .5	1,062	1,103 b	19
Do.	1.00 + .5	1,131	531 b	10
Do.	1.25 + .5	1,152	694 b	9
TD-1123 + chlormequat	.5 + .5	1,123	123 b	12
Do.	.75 + .5	1,135	204 b	8
Do.	1.00 + .5	1,266	204 b	-3
Do.	1.25 + .5	1,266	82 b	-3
CV (percent)[2]		9	90	--

TABLE 60.--Continued

Treatment	Application rate	Emergence (field)	Average time to emerge	Dead seedlings
	Lb ai/acre	*Percent*	*Days*	*No./100 seed*
Check		92	9.0	4
TD-1123 + chlorflurenol	0.5 + 0.5	87	8.4	5
Do.	.75 + .5	83	9.3	1
Do.	1.00 + .5	84	9.0	3
Do.	1.25 + .5	86	9.5	3
TD-1123 + chlormequat	.5 + .5	81	9.5	3
Do.	.75 + .5	89	9.1	3
Do.	1.00 + .5	85	9.6	2
Do.	1.25 + .5	91	9.0	4
CV (percent)[2]		9	9	78

[1]Means within a column followed by the same letter do not differ significantly at having a CV, but no letters, are not significantly different at the 5-percent level by

[2]CV = coefficient of variation.

chlorflurenol and with chlormequat for chemical termination and applied September 13, 1976

Defoliation	Seed weight	Floaters	Gin turnout	Lint	Trash
Percent	*G/100 seed*	----------*Percent*----------			
35 b	8.8	22	33.7	37.3	10.4
72 a	8.6	21	33.8	37.3	9.2
80 a	8.6	23	33.7	36.8	9.0
66 a	8.7	23	33.3	36.9	9.7
76 a	8.8	23	34.0	36.8	7.7
66 a	8.7	21	34.2	37.1	7.8
76 a	8.7	20	34.1	37.2	8.4
68 a	8.9	25	33.7	37.1	9.3
80 a	8.8	26	33.9	37.3	9.2
25	2	14	2	1	22

Fiber length		Fiber uniformity	Fiber strength	Micronaire
2.5-percent span	50-percent span			
Inches	*Inch*	*Percent*	T_1	
1.09	0.51	46	20.6	4.20
1.10	.53	48	20.5	4.27
1.06	.49	46	20.1	4.38
1.09	.52	48	20.7	4.21
1.07	.51	48	20.0	4.36
1.09	.52	48	20.2	4.28
1.09	.52	48	20.0	4.17
1.11	.53	47	20.3	4.21
1.09	.52	47	20.1	4.26
3	6	3	3	3

the 5-percent level, according to Duncan's multiple range test. Means of columns the F test.

TABLE 61.--*Test 49: Effects of TD-1123 and BAS 08300 at different rates for*

Treatment	Application rate	Lint yield 1st pick	Lint yield 2d pick	Lint yield Total	Immature bolls
	Lb ai/acre	*Lb/acre*			*No./acre*
Check		1,074[1]	221 a	1,295	46,432 a
TD-1123 + BAS 08300	0. + 0.5	1,033	207 ab	1,240	43,165 a
Do.	.25 + .5	1,037	193 abc	1,230	30,220 ab
Do.	.5 + .5	1,056	115 bc	1,170	12,088 bc
Do.	.75 + .5	1,029	107 bc	1,136	10,414 bc
Do.	.5	1,086	94 c	1,181	7,147 c
Do.	.5 + .75	1,123	87 c	1,210	8,331 c
CV (percent)[2]		20	45	13	60

TABLE 61.--Continued

Treatment	Application rate	Trash	Emergence (field)	Average time to emerge	Dead seedlings
	Lb ai/acre	*Percent*		*Days*	*No./100 seeds*
Check		11.8	89	8.6	4
TD-1123 + BAS 08300	0. + 0.5	12.0	90	8.6	3
Do.	.25 + .5	10.3	90	8.6	1
Do.	.5 + .5	11.1	89	8.6	1
Do.	.75 + .5	11.3	91	8.4	1
Do.	.5	12.1	90	8.4	2
Do.	.5 + .75	11.2	86	8.4	5
CV (percent)[2]		14	4	6	92

[1]Means within a column followed by the same letter do not differ significantly at having a CV, but no letters, are not significantly different at the 5-percent level by
[2]CV = coefficient of variation.

chemical termination of AZ 64 cotton applied on September 15, 1976, at Phoenix, Ariz.

DE index	Defoliation	Seed weight	Floaters	Gin turnout	Lint
	Percent	*G/100 seed*	----------*Percent*----------		
100	28	10.8	14	35.3	40.0
97	32	10.8	15	34.5	39.2
70	32	10.8	14	35.4	39.4
36	54	10.9	15	35.3	39.7
37	47	10.7	14	34.9	39.3
24	48	10.8	14	34.9	39.7
24	55	10.8	15	34.6	39.0
--	36	2	34	2	2

Fiber length		Fiber	Fiber	Micronaire
2.5-percent span	50-percent span	uniformity	strength	
Inches	*Inch*	*Percent*	T_1	
1.15 a	0.59 a	51 a	21.7 a	4.19 a
1.14 a	.58 a	51 a	21.0 ab	4.10 ab
1.07 b	.51 b	48 b	19.6 d	4.32 a
1.14 a	.57 a	50 a	20.8 bc	3.92 b
1.14 a	.58 a	51 a	20.5 bc	4.09 ab
1.13 a	.58 a	51 a	20.9 bc	4.09 ab
1.15 a	.58 a	51 a	20.3 c	3.95 b
2	4	2	2	4

the 5-percent level, according to Duncan's multiple range test. Means of columns
the F test.

TABLE 62.--*Test 50: Effects of several rates of chlorflurenol and when applied September 17, 1976,*

Treatment	Application rate	Lint yield			Immature bolls
		1st pick	2d pick	Total	
	Lb ai/acre	*Lb/acre*			*No./acre*
Check		1,123[1]	204 a	1,327	42,185 a
TD-1123 + chlormequat	1.0 + 0.125	1,021	97 bc	1,118	8,453 b
Do.	1.0 + .25	1,062	111 bc	1,173	10,128 b
Do.	1.0 + .5	1,115	73 bc	1,188	5,105 b
Do.	1.0 + 1.0	1,013	99 bc	1,112	8,535 b
Do.	1.0 + 2.0	1,152	73 bc	1,224	3,798 b
TD-1123 + chlorflurenol	1.0 + .125	915	110 bc	1,032	10,209 b
Do.	1.0 + .25	1,070	131 b	1,201	7,637 b
Do.	1.0 + .5	874	105 bc	978	6,085 b
Do.	1.0 + 1.0	1,127	66 c	1,194	2,124 b
Do.	1.0 + 2.0	1,037	84 bc	1,121	3,635 b
CV (percent)[2]		21	36	18	67

TABLE 62.--Continued

Treatment	Application rate	Trash	Emergence (field)	Average time to emerge	Dead seedlings
	Lb ai/acre	*Percent*		*Days*	*No./100 seeds*
Check		10.8	89	8.2	5
TD-1123 + chlormequat	1.0 + 0.125	11.8	86	8.3	6
Do.	1.0 + .25	11.5	88	8.6	3
Do.	1.0 + .5	10.5	89	8.4	3
Do.	1.0 + 1.0	12.4	87	8.3	4
Do.	1.0 + 2.0	10.2	90	8.2	5
TD-1123 + chlorflurenol	1.0 + .125	12.6	87	8.2	5
Do.	1.0 + .25	11.2	88	8.2	5
Do.	1.0 + .5	12.9	88	8.1	4
Do.	1.0 + 1.0	10.9	87	8.2	7
Do.	1.0 + 2.0	11.8	89	8.5	4
CV (percent)[2]		20	6	6	70

[1]Means within a column followed by the same letter do not differ significantly at having a CV, but no letters, are not significantly different at the 5-percent level by

[2]CV = coefficient of variation.

chlormequat with TD-1123 for chemical termination of AZ 64 cotton at Phoenix, Ariz.

DE index	Defoliation	Seed weight	Floaters	Gin turnout	Lint
	Percent	*G/100 seed*	----------*Percent*----------		
100	26	10.7	17	35.1	39.4
36	41	10.8	15	35.1	39.9
36	42	10.8	17	35.4	40.0
23	50	10.9	13	35.1	39.2
36	41	10.8	16	34.8	39.8
17	53	10.9	15	35.7	39.7
46	31	11.0	14	35.0	40.1
27	43	10.8	14	34.9	39.3
41	36	10.8	14	34.9	40.1
15	51	11.0	11	35.2	39.5
24	39	10.9	10	35.5	40.2
--	27	2	29	2	2

Fiber length		Fiber	Fiber	
2.5-percent span	50-percent span	uniformity	strength	Micronaire
Inches	*Inch*	*Percent*	T_1	
1.13	0.57	53	22.4	4.26
1.15	.59	51	22.3	4.08
1.13	.56	50	22.2	4.05
1.09	.53	48	21.6	4.33
1.11	.56	50	21.2	4.18
1.12	.57	50	21.2	4.12
1.14	.58	51	22.1	4.06
1.13	.58	51	21.9	4.07
1.13	.57	50	21.5	3.94
1.14	.57	50	21.8	4.03
1.11	.55	49	20.2	3.99
3	5	4	4	5

the 5-percent level, according to Duncan's multiple range test. Means of columns the F test.

TABLE 63.--*Test 51: Effects of TD-1123 at 2 rates for chemical*

Treatment	Application rate	Lint yield			Immature bolls
		1st pick	2d pick	Total	
	Lb ai/acre	*Lb/acre*			*No./acre*
Check		1,274 a[1]	65 a	1,339 a	30,791 a
TD-1123	0.75	1,250 a	41 ab	1,291 a	7,759 b
Do.	1.50	1,070 b	23 b	1,094 b	3,430 b
CV (percent)[2]		7	41	6	53

TABLE 63.--Continued

Treatment	Application rate	Trash	Emergence (field)	Average time to emerge	Dead seedlings
	Lb ai/acre	*Percent*		*Days*	*No./100 seeds*
Check		9.3	90	8.0	8
TD-1123	0.75	13.2	85	7.7	7
Do.	1.50	12.2	91	7.5	9
CV (percent)[2]		25	8	17	95

[1]Means within a column followed by the same letter do not differ significantly at having a CV, but no letters, are not significantly different at the 5-percent level by

[2]CV = coefficient of variation.

termination of AZ 64 cotton, when applied on September 14, 1976, at Phoenix, Ariz.

DE index	Seed weight	Floaters	Gin turnout	Lint
	G/100 seed		*Percent*	
100	10.8	11	36.5	40.2
29	10.7	14	35.3	40.7
29	10.6	13	35.1	40.1
--	2	16	6	4

Fiber length		Fiber uniformity	Fiber strength	Micronaire
2.5-percent span	50-percent span			
Inches	*Inch*	*Percent*	T_1	
1.12	0.57	51	22.2	4.36 a
1.12	.57	51	22.6	4.19 b
1.12	.56	50	21.6	4.32 a
1	4	3	4	1

the 5-percent level, according to Duncan's multiple range test. Means of columns
the F test.

TABLE 64.--*Test 51: Effects of TD-1123 at 2 rates for*

Harvest date	Lint yield			
	Check	TD-1123[1]	TD-1123[2]	Mean
	Lb/acre			
Sept. 7	371[3]	348	456	392 a
14	329	336	269	313 ab
21	223	184	212	206 bc
28	115	133	118	122 c
Oct. 5	83	83	63	76 c
12	60	72	57	63 c
19	53	95	42	63 c
26	41	43	22	35 c
Nov. 2	62	61	18	47 c
Total or mean	1,337	1,355	1,257	
Date X treatment[4]			N.S.	
CV (percent)[5]			34	

TABLE 64.--Continued

Harvest date	Lint			
	Check	TD-1123[1]	TD-1123[2]	Mean
	Percent			
Sept. 7	36.8	36.7	36.8	36.8 c
14	35.7	35.2	35.6	35.5 c
21	36.5	36.3	36.6	36.5 c
28	36.9	36.9	37.0	36.9 c
Oct. 5	37.9	38.0	38.1	38.0 bc
12	40.6	39.0	41.5	40.4 ab
19	43.2	42.0	41.7	42.3 a
26	40.9	42.2	43.5	42.2 a
Nov. 2	39.4	43.2	39.3	40.6 ab
Total or mean	38.6	38.8	38.9	
Date X treatment[4]			*	
CV (percent)[5]			4	

See footnotes at end of table.

chemical termination of AZ 64 cotton, when applied on September 14, 1976, at Phoenix, Ariz.

Seed weight				Floaters			
Check	TD-1123[1]	TD-1123[2]	Mean	Check	TD-1123[1]	TD-1123[2]	Mean
G/100 seed				*Percent*			
11.3	11.2	11.1	11.2 a	12 j-n	12 i-n	9 n	11 b
11.3	11.3	11.0	11.2 a	10 mn	11 k-n	11 l-n	11 b
10.8	10.9	10.7	10.8 ab	14 f-l	15 f-i	13 g-m	14 b
10.6	10.6	10.6	10.6 abc	13 h-m	13 f-j	16 efg	14 b
10.2	10.2	10.1	10.2 bc	17 e-f	12 h-m	19 de	16 b
10.0	10.3	10.1	10.1 bc	13 g-m	11 lmn	14 f-k	13 b
10.2	10.2	9.9	10.1 c	13 g-m	19 de	30 c	21 ab
10.7	9.9	10.5	10.3 bc	17 efg	28 c	40 a	28 a
10.6	9.7	10.3	10.2 bc	22 d	36 b	36 b	32 a
10.6	10.5	10.5		15 c	18 b	21 a	
		N.S.				**	
		3				35	

Field emergence				Average time to emerge			
Check	TD-1123[1]	TD-1123[2]	Mean	Check	TD-1123[1]	TD-1123[2]	Mean
Percent				*Days*			
95	92	93	93 a	8.1	7.2	8.0	7.7
93	95	93	93 a	7.7	8.1	7.9	7.9
95	96	95	95 a	8.3	8.2	8.1	8.2
93	90	91	91 a	8.0	8.0	8.0	8.0
73	56	65	65 b	8.8	8.3	8.3	8.5
95	89	86	90 a	8.5	8.5	8.4	8.5
90	86	75	83 a	8.3	8.5	8.8	8.6
88	84	82	85 a	8.5	8.7	8.9	8.7
87	84	81	84 a	8.5	9.4	9.2	9.0
90 a	86 b	85 b		8.3	8.3	8.4	
			N.S.				N.S.
			10				8

TABLE 64.--*Test 51: Effects of TD-1123 at 2 rates for chemical*

Harvest date	Dead seedlings			
	Check	TD-1123[1]	TD-1123[2]	Mean
	No./100 seed			
Sept. 7	1	8	3	
14	2	2	3	
21	3	4	4	
28	7	3	3	
Oct. 5	1	2	4	
12	3	4	2	
19	4	3	3	
26	5	3	1	
Nov. 2	2	1	3	
Total or mean	3	3	3	
Date X treatment[4]			N.S.	
CV (percent)[5]			89	

TABLE 64.--Continued

Harvest date	Fiber uniformity			
	Check	TD-1123[1]	TD-1123[2]	Mean
	Percent			
Sept. 7	54	54	52	53 a
14	53	53	54	53 a
21	52	52	52	52 a
28	49	49	49	49 b
Oct. 5	48	49	49	49 b
12	49	48	49	49 b
19	48	48	49	49 b
26	49	48	49	49 b
Nov. 2	49	45	45	46 c
Total or mean	50	50	50	
Date X treatment[4]			N.S.	
CV (percent)[5]			3	

[1]0.75 lb ai/acre.
[2]1.5 lb ai/acre.
[3]Means within a column, or among seasonal means of a to Duncan's multiple range test. Means of columns or seasonal F test.
[4]N.S., *, ** = not significant, significant at the interaction.
[5]CV = coefficient of variation.

termination of AZ 64 cotton, when applied on September 14, 1976, at Phoenix, Ariz.-Continued

Fiber length (2.5-percent span)				Fiber length (50-percent span)			
Check	TD-1123[1]	TD-1123[2]	Mean	Check	TD-1123[1]	TD-1123[2]	Mean
Inches				*Inch*			
1.14	1.16	1.13	1.14 abc	0.61	0.63	0.59	0.61 a
1.18	1.17	1.17	1.17 a	.62	.62	.63	.62 a
1.15	1.17	1.16	1.16 a	.60	.61	.60	.60 a
1.10	1.10	1.10	1.10 cd	.54	.55	.54	.54 b
1.12	1.10	1.13	1.11 bcd	.54	.53	.56	.54 b
1.09	1.10	1.08	1.09 d	.54	.53	.53	.53 b
1.11	1.11	1.13	1.12 bcd	.54	.54	.56	.54 b
1.17	1.13	1.16	1.16 ab	.57	.54	.57	.56 b
1.17	1.14	1.17	1.16 a	.57	.52	.53	.54 b
1.14	1.13	1.14		.57	.56	.57	
		N.S.				N.S.	
		3				4	

Fiber strength				Micronaire			
Check	TD-1123[1]	TD-1123[2]	Mean	Check	TD-1123[1]	TD-1123[2]	Mean
T_1							
24.2	25.5	24.9	24.8 a	4.41 c-f	4.22 d-g	4.61 b-e	4.41 bc
24.4	24.0	24.1	24.2 a-d	4.03 f-g	4.16 efg	3.90 gh	4.03 cd
23.2	23.8	24.2	23.7 a-d	3.93 gh	3.91 gh	3.85 gh	3.90 d
22.0	22.0	22.6	22.2 bcd	4.89 ab	4.78 abc	5.01 a	4.89 a
21.7	21.7	22.4	21.9 cd	4.83 abc	4.93 ab	4.92 ab	4.89 a
21.4	21.7	22.1	21.7 d	4.86 abc	4.67 a-d	4.82 abc	4.78 ab
24.1	23.4	26.3	24.6 ab	4.54 b-e	3.91 gh	3.79 ghi	4.08 cd
23.9	24.2	24.7	24.3 abc	3.60 hij	3.32 jk	3.17 kl	3.36 e
23.3	22.1	22.7	22.7 a-d	3.40 ijk	2.71 m	2.81 lm	2.97 e
23.1 b	23.2 b	23.8 a		4.28	4.07	4.10	
		N.S.				**	
		5				6	

category, followed by the same letter do not differ significantly at the 5-percent level according
means, having a CV, but no letters, are not significantly different at the 5-percent level by the

5-percent level, and significant at the 1-percent level, respectively, for the date by treatment

TABLE 65.--*Comparison of effect of chemical termination of cotton on lint yield from small experiment station plots and large farm plots, 1973-76*

Year	Experiment Station	Farms	Level of significance[1]
	-------Percent of check-------		
1973	80.9	109.5	0.001
1974	97.1	101.2	N.S.
1975	90.8	100.4	.20
1976	97.0	108.0	.20
Mean	91.5	104.8	.001

[1]The ratios of individual treated plots to their checks were compared with the nonpaired *t* test for different numbers of observations.

GPO 793-632

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